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Worldwide Report

EPIDEMIOLOGY



FOREIGN BROADCAST INFORMATION SERVICE

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10 May 1984

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BRIEFS

POLIO IMMUNIZATION DELAY--The Ministry of Health announced recently that because its shipment of vaccines for 1984 has not yet arrived the Immunization Programme for young children has been cancelled until further notice. "The shortage of vaccine refers to the triple and polio vaccines only, since we have an adequate supply of measles vaccine. Media announcements will be made advising parents when they should present their children for immunization. This temporary delay does not in any way endanger the health of our children," a Ministry release stated. "As part of our Child Health Programme we have been vigorously encouraging mothers to bring their children forward for Immunization and this programme has been successful to the extent that a much greater quantity of vaccine was used than in previous years. Unfortunately," the release continued, "the Ministry's vaccine supplies for 1984 have not yet been received, but are expected shortly. Our vaccine supplies are usually received in March of each year and normally we have a stock in hand for use in January and February until the new supplies arrive," the Ministry explained. [Text] [Nassau THE TRIBUNE in English 13 Feb 84 p 4]

CSO: 5400/7556

BRIEFS

PIROJPUR CHOLERA DEATHS--Pirojpur, Mar 23: Cholera claimed 85 people and attacked 560 more in the whole district during past seven days, reliable sources say. The District Civil Surgeon however, confirmed 12 deaths and 99 cases of attack. Mathbaria upazila in the worst affected area. Two medical teams have been sent there. But in adequate supply of medicine coupled with paucity of drinking water has aggravated the misery of people. Last year also scores of people died of cholera in Mathbaria. [Text] [Dhaka THE NEW NATION in English 24 Mar 84 p 1]

BHOLA CHOLERA DEATHS--Bhola, Apr. 4:--Fifty three persons died of cholera in a last fortnight in Bhola district according to Civil Surgeon office sources, reports BSS. Of them, 37 persons died in Rajapur union under Bhola Sadar upazila nine persons in Lalmohan, six persons in Charfession and one person in Daulatkhan upazila. About 450 persons were attacked with cholera in different upazilas in the district. Bhola District Civil Surgeon said that cholera had broken out in an epidemic form in Rajapur union due to unhygienic drinking water and foodstuff. He said that two medical teams consisting of 12 health assistants in each team had been deputed in the area to deal with the situation. They are distributing water purifying tablets and vaccinating people in the affected areas. Deep tubewells should be sunk for pure drinking water in the area, he suggested. [Text] [Dhaka THE BANGLADESH OBSERVER in English 5 Apr 84 p 10]

CSO: 5400/7095

BELIZE

BRIEFS

BATTLE AGAINST MALARIA--The Ministry of Health has stepped up its campaign to stamp out malaria in Belize. As part of this programme, and in cooperation with the Pan American Health Organization (PAHO), the regional health institution has provided equipment and supplies valued at \$.4m(Bze) to the Ministry of Health. This includes a quantity of insecticides and transportation including specially equipped vehicles to visit the rural areas, powered boats and spraying and laboratory equipment. A spokesman for the Ministry of Health anticipates that the programme will effectively increase and that efforts will continue to be made to improve the implementation of the Malaria Eradication Campaign. [Text] [Belize City BELIZE SUNDAY TIMES in English 1 Apr 84 p 5]

CSO: 5400/7557

BRAZIL

BRIEFS

MALARIA UPSURGE--A medical seminar held in Porto Velho, Rondonia State, studied the serious situation caused by the increase of malaria in Amazon River states, since in Rondonia State alone there were 70,000 malaria cases last year. This is a 32-percent increase in comparison to 1982. The seminar proposed to carry out a campaign to stop malaria and noted that the main cause of the increase is the lack of proper infrastructure in settlement programs. [Text]

[PY182132 Sao Paulo Radio Bandeirantes Network in Portuguese 1000 GMT
16 Apr 84 PY]

CSO: 5400/2060

EQUATORIAL GUINEA

BRIEFS

CHOLERA IN EQUATORIAL GUINEA--The cholera epidemic in Equatorial Guinea is subsiding, according to our special correspondents in Malabo. Most of those affected by the outbreak, which occurred on the island territory of Bioko, are already out of danger. Eleven people died from the disease 2 weeks ago. [Excerpt] [Madrid EL PAIS in Spanish 16 Apr 84 p 1]

CSO: 3448/9

PROGRESS NOTED IN DECENTRALIZATION OF HEALTH SERVICES

Georgetown GUYANA CHRONICLE in English 9 Feb 84 p 8

[Text]

CHIEF Medical Officer, Dr. Walter Chin, said Tuesday that the Health Ministry's decentralization programme, which started two years ago, is now quickening dramatically.

Regional Health Officers and Regional Health teams which had previously been identified should now be fully functional, he said.

Dr. Chin told 100 health professionals, who completed 10-day courses in primary health care, post-natal care and family planning between October 1981 and April 1983, that with decentralization, more authority, responsibility and financial resources had been given to the Regions of Guyana.

The courses were sponsored jointly by the Guyana Responsible Parenthood Association (GRPA) and the Health Ministry. The participants, drawn from the Health Ministry, the Georgetown Municipality and the Guyana Sugar Corporation (Guysuco), were presented with their certificates Tuesday afternoon.

The Chief Medical Officer observed that communities would now be involved in planning, programming, budgeting, implementing and evaluating their own health services.

In outlining the functions of the Regional Health

Teams, Dr. Chin said they must be able to monitor the health status of the Regions, to ensure the execution of health programmes in the Regions, to establish close co-ordination with the Regional Democratic Councils, and to establish links for community participation.

Further, he added, the health teams must ensure that health laws and regulations are observed. They must also enforce fiscal control and procedures in the Region's administration.

Dr. Chin emphasised that matters affecting health personnel must be handled first by the Regional Health Officer or the Regional Health Team.

In her charge to the graduands, Cde. Sylvia Pemberton, Nursing Officer at the University of Guyana, exhorted them to serve their communities to the best of their ability and to execute sound judgement, tact, patience and skill.

Certificates were handed out by Cde. Olga Byrne, Executive Director of GRPA; Cde. Leila Mongul, Programme Assistant of the United States Agency for International Development (USAID); Cde. Lynette Smith, Nursing Supervisor; and Cde. Joan Fredericks, Deputy Matron of the Georgetown Hospital.

LOOPHOLES FOUND IN WATER CONTAMINATION CHECKING SYSTEM

Hong Kong SOUTH CHINA MORNING POST in English 18 Mar 84 p 10

[Article by Vicky Wong]

[Text]

Several villages may have escaped official attempts to provide them with safeguards against drinking dangerously contaminated water.

Investigations have revealed that official lists do not accurately reflect the true number of water sources which should be subject to monitoring work.

The Urban Services Department is supposed to maintain a master list of wells and streams which provide a public source of portable water supply to communities deprived of Government mains water.

And based on this list, staff from the USD and New Territories Services Department are supposed to carry out a daily programme of chlorination to disinfect the water.

In addition, the water is supposed to be regularly analysed for bacterial and chemical pollution to ensure that emergency action can be taken when contamination rises to dangerous levels.

According to the USD, only water sources situated not less than 15 minutes walking distance of a Government mains supply are included in this list.

This criterion ensures that

unnecessary chlorination and monitoring work need not be done on those wells and streams located in areas already served by Government mains water.

This, at least, is the picture as far as USD headquarters is aware.

And the USD should know — this department is supposed to guide and co-ordinate the work performed by its own staff as well as by the NTSD.

It appears, however, there is a lack of communication between the two departments.

According to the USD master list, there is supposed to be a total of 149 water sources (42 in the urban areas, 107 in the NT) subject to chlorination and monitoring.

However, NTSD headquarters list a total of 158 wells and 17 streams in the NT area alone where such work is carried out.

Further investigations reveal that there may be more serious breakdowns in communication.

Take Lantau, for instance, an island several times the size of Hongkong, the vast majority of which is not served by a Government mains

water supply.

According to the USD list for Lantau, there are only five water sources subject to chlorination and monitoring work.

NTSD headquarters list 10.

NTSD operations list 26.

To complicate matters further, it appears that none of these lists accurately show the true number of water sources used by Lantau residents which should be subject to monitoring.

As reported in last Sunday's SCM Post, Tong Fuk village, south Lantau, draws its water from a catchment area that feeds the Shek Pik reservoir.

This community has no access to Government mains water at present and is not expected to get a metered supply for some years yet.

But Tong Fuk's water source is not included in any of the USD or NTSD lists.

Tong Fuk's water is therefore neither subject to chlorination nor monitoring.

It is interesting to speculate how many additional population centres may have similarly escaped official attempts to provide them with safeguards against drinking contaminated water.

DRINKING WATER FOUND TO HAVE POISONOUS CHEMICALS

Hong Kong SOUTH CHINA MORNING POST in English 18 Mar 84 pp 1, 18

[Article by Vicky Wong]

[Text] Many people in Hongkong are unwittingly drinking water that is heavily laced with poisonous and cancer-causing chemicals.

These chemicals cannot be destroyed by boiling.

At present, there are many communities — both in the urban and rural areas — which still do not receive government mains water.

They have to depend on water drawn from wells, streams or catchment areas.

This water is often heavily contaminated with agricultural waste and to a lesser degree, industrial waste, government tests have verified.

To control bacterial pollution, both the Urban Services Department and the New Territories Services Department attempt to chlorinate these water sources each day.

The NTSD also advises people who depend on non-government mains water to further carry out their own chlorination of supplies at home before use.

In addition, the public is advised that such water should be boiled before drinking.

These various measures should safeguard against the risk of contracting infections posed by drinking water contaminated with bacterial and faecal pollution since disease-carrying organisms can be killed by boiling even in the absence of chlorination.

However, neither chlori-

nation nor boiling can decontaminate water which is chemically polluted.

Moreover, the act of chlorination itself can actually lead to the formation of even more hazardous substances such as nitrates, which can cause cancer, as well as another cancer-causing group of chemicals known as THMs, trihalomethanes.

These cancer-causing agents can be formed as a result of chlorine reacting with organic material in the water.

According to the USD and the NTSD, samples are collected regularly from wells and streams which provide a source of portable water for bacteriological and chemical analysis.

The bacteriological tests show that a large proportion of samples sent for analysis contain coliform and E coli levels in excess of World Health Organisation standards.

Overseas tests have shown that the chance of THM formation is high when chlorine is added to such contaminated water.

According to the USD, however, tests are not carried out to monitor the presence of THMs in the samples sent for analysis.

It is therefore not known whether the Government's policy of daily chlorination of well and stream water poses an unacceptable THM risk to those who have to depend on such sources.

On the chemical side, there is no cause for concern regarding contamination by

toxic compounds such as arsenic, cadmium, lead, mercury, cyanide and selenium.

However, tests carried out on the presence of other chemicals such as nitrates and fluoride present a more worrying picture.

These tests recently show that water obtained from six different wells or streams supplying drinking water to nearby communities are "not suitable for drinking" because of high levels of fluoride or nitrates.

In small amounts, fluoride can be added to the water supply to prevent dental decay.

But fluoride is also a poison which, in larger quantities, has bad effects on the health.

Despite the known contamination, the use of such water is still allowed by the authorities.

According to the WSD, a required number of consecutive "not suitable for drinking" results are needed before action can be instituted to close down these contaminated water sources and to provide an alternate supply.

And none of the six water sources found to have excessive levels of fluoride and nitrates has yet registered such consecutively unsatisfactory results.

At present, it cannot be determined how many wells or streams come under the USD and NTSD chlorination and water quality monitoring programme since conflicting figures have been supplied by the two departments.

SEVERAL UTTAR PRADESH DISTRICTS SUFFERING COMMUNICABLE DISEASES

New Delhi INDIA TODAY in English 15 Apr 84 pp 70, 71, 73

[Article by Prabhu Chawla]

[Text]

SOMETHING is rotten in the state of Uttar Pradesh. That fact was made alarmingly evident by the stream of statistics that were pouring into the state Health Ministry's offices. In Shahjahanpur district alone, over 600 people had died last year allegedly due to malarial infection as against 173 in the rest of the country. Last year, in 20 districts, 643 people lost their lives to gastroenteritis. Another 100 patients succumbed to the painful and unshakable grip of tetanus in government hospitals. All in all, by December last year, 10 major diseases had killed over 5,000 people in Uttar Pradesh—compared to slightly over 6,000 in the rest of India—mostly in the economically prosperous districts of Shahjahanpur, Sitapur, Ballia, Meerut, Ghaziabad, Allahabad, Pratapgarh and Kanpur.

According to the Union Health Ministry those bare figures make Uttar Pradesh the state with the highest number of deaths due to disease in the country. State Health Minister Lokpati Tripathi is unconvinced: "The death figures have been exaggerated. Uttar Pradesh is as good or as bad as any other state. In fact, we have succeeded in ensuring the best rural health in the country."

That is obfuscation of a high order. For, following a furore in the Assembly over the large number of malaria deaths in Shahjahanpur, Tripathi ordered suspensions, dismissals and disciplinary action aimed at a hundred senior doctors in the state. They were charged with negligence of duty and financial irregularities in the purchase of medicines. The axe wreaked most havoc in the Malaria Department, although the chubby-cheeked health minister had no qualms in denying that 600 people had died because of malaria in Shahjahanpur (see box)

The malaria epidemic, supposedly confined to western Bihar, has in fact been Tripathi's major concern all along. The state has spent over Rs 40 crore on the National Malaria Eradication Programme (NMEP) but the deadly disease is still on the rampage, its prevalence having risen by 70 per cent in one year. Said V.P. Sahani, state health secretary: "A situation of panic was created unnecessarily. Since we are in the process of building an infrastructure, the Health Department might have erred in gauging the urgency. But on the whole the situation is now completely under control."

But, as a routine report last winter by the Comptroller Auditor General of India (CAG) makes clear, that claim is not quite correct. It squarely blamed state health officials for the malaria revival in Uttar Pradesh, pointed out specific cases of corruption and held the state malaria officials responsible for neglecting 'areas' (specified breeding-grounds for mosquitoes) with an Annual Parasitic Index (API) of more than two per 1,000 people by not spraying them with insecticides. The Vigilance Department also looked into the charge that of 9 lakh drinking water wells, over 2 lakh were not disinfected twice a month as required although money was spent on this account. Significantly, the maximum number of deaths took place in these areas.

Further investigations by CAG officials concluded that the state's Malaria Department failed miserably in achieving its targets of spraying various districts with either *DDT* or *DDP*. Central Government guidelines state that each area with an API—indicative of the prevalence of parasites in blood—of two and above should be sprayed at least thrice a year; the Malaria Department concentrated

on areas that had an API of less than two. Between 1979 and 1983, for example, 20 districts with a population of over 5 crore—but with an API of 'less than two—were sprayed three times. Yet malaria-prone districts like Pratapgarh, Gorakhpur, Deoria, Sitapur, Shahjahanpur, Jhansi, and Lalitpur—with an API of more than two—were not fully covered. The report claims that the number of unsprayed areas with an API of more than two rose from 2.16 lakh in 1979 to 4.98 lakh in 1980 and to an estimated 7 lakh in 1982.

The explanations offered by the officials for this appalling lapse were unconvincing—lower API areas existed within zones with higher API; shortage of DDT and BHC prevented them covering the higher API districts. But, the quantity of insecticides actually used should have disinfected many more areas than were done. Between 1977 and 1980, the state Government used 223.2 tonnes of DDT for spraying 11.15 lakh houses in Banda district alone. Yet according to the Malaria Department 0.6 lb of DDT is required for a six-room house—the norm fixed by the Centre; and the state should have used only 177.2 metric tonnes of DDT—which implies an excess use of 46 tonnes. In addition malaria eradication officials sprayed DDT in areas where they should have used BHC.

Not only were the areas with higher malarial incidence left out, some districts were also supplied with substandard insecticides. According to the CAAO report and a public analyst these included 290 tonnes of DDT used in eight districts like Mathura, Muzaffarnagar and Rae Bareilly. Curiously enough, when the state officials questioned the findings and sought a second report from New Delhi, it cleared the consignment of DDT. But when the Public Accounts Committee (PAC) specifically asked the NMEP officials whether they had sent the samples for chemical examination to Delhi from the same consignment examined by the public analyst, they nearly replied that they "weren't sure about it".

Some of the important findings of the CAAO and the PAC about the implementation

of the NMEP in the state are:

► Despite a 20 per cent rise in NMEP expenditure, the state Government could not ensure spraying of both DDT and BHC three times a year—a target fixed while seeking

the Assembly's approval for the budget.

► The authorities failed to collect enough blood samples—the very first step in any malaria eradication programme. Against a target of 40 lakh blood samples to be collected from eight malaria-prone districts, only 18 lakh samples were actually taken. Of these, over 70 per cent were examined in a period varying between a week and two months.

► Over one crore suspected malaria cases were treated without examining their blood samples during 1980-81.

► Though separate malaria dispensaries were opened in all 56 districts, none managed to collect even 50 per cent of their target of blood samples.

► Despite repeated warnings by district officials and the village health workers, enough measures were not taken to minimise malaria.

It is no coincidence that the districts ignored under the NMEP reported the largest number of malaria cases between 1980 and '82. Of the 1,70,000 positive cases, over a lakh were registered in Meerut, Ghaziabad, Bulandshahr, Muzaffarnagar and Saharanpur, Bareilly, Moradabad, Badaun, Pilibhit, Rampur and Shahjahanpur. And districts like Mainpuri, Ghazipur, Jaunpur, Ballia, Varanasi, Banda and Jalaun reported hardly 20,000 positive cases. Said Rajinder Singh, leader of the Opposition: "The Health Department undoubtedly eradicated malaria on paper because it has to justify the enormous expenditure on NMEP. Actually the money has gone into the pockets of unscrupulous ruling party leaders and doctors. And it is not in NMEP alone that funds have been misappropriated: there is not a single unit of the Health Department which is not stinking with corruption."

The findings of the Vigilance Department are revealing: of the Rs 30 crore spent on medicine purchases, over Rs 5 crore

was for substandard medicines or paid to the suppliers without taking delivery of the medicines. Presently 50 cases of over-purchase are being handled by the department. Last month, the Health Department received a detailed report on the distribution of allopathic medicines worth over Rs 1.50 crore during 1980-81 when they were not purchased during that year at all. The Directorate of Health Services in its annual report for 1980-81 claimed that it had distributed 2 lakh kits of allopathic medicines in the state's 56 districts by March 31, 1981. But when the auditors scrutinised the supplies they found that a private firm had in fact supplied the medicines between April and June 1981 and the dispatches were made in December 1981.

In yet another case, substandard medicines worth Rs 1.10 crore were bought from a Delhi-based firm in 1981 for distribution in 1,000 dispensaries. When the drugs were examined by the state's public analyst, it was discovered that five of the 10 medicines were substandard. The state Government then decided to send the samples for examination to the Central Drugs Laboratory in Calcutta. Eight months passed before the Health Department actually dispatched the samples. And till December 1982, the state Government did not receive any report from Calcutta but it did distribute the entire consignment of medicines to its dispensaries.

By then the CAAG officials had begun their intensive probe of the Medical Department. A dozen officials spent two months last year on the job, concentrating on the distribution and sale of substandard medicines. In its report, yet to be placed in the Assembly, the CAAG indicted the state Government for its failure to eliminate the sale of spurious drugs and for delaying action against the peddling of substandard medicines. During 1974-82, drug importers examined over 12,000 medicine samples. Of these over 150 were totally spurious while 1,300 were substandard. In 1981, the central drug controller directed the state Government to punish the manufacturers, suppliers and buyers of spurious drugs. Two years later no action had been taken.

Under the Drugs & Cosmetics Act, 1945, the state Government should order the withdrawal of the entire batch of medicines if the samples fail to pass the examination. But in over 11 districts, the medicines—which were either spurious or substandard—were being openly sold in the market and distributed in government hospitals.

The CAAG reports have also accused health officials of not taking a sufficient number of samples for examination. Under the rules, a minimum of 17,000 samples have to be lifted from over 350 drug manufacturers and 4,000 chemists annually but the number never exceeded 14,000 till last year. During 1974-82, samples were not taken from over 40 per cent of the manufacturers and retailers.

The CAAG officials also discovered that certain goods that were not even ordered were supplied to the department. For example, between 1980 and 1982 an order for bandages and cotton worth Rs 60 lakh was placed, with a Meerut-based firm. Instead of supplying bandages of a specified quality the firm delivered handloom cloth worth Rs 18 lakh. Again, medicines worth Rs 2 crore were purchased from unapproved suppliers. In 1980 and 1982, medicines worth Rs 50 lakh were bought in Kheri, Bareilly, Etawa, Meerut and Gorakhpur from 10 unapproved firms without asking for tenders.

Finally, when the political clamour over these malpractices grew too loud, the state Government came down hard on the offenders. Between 1980 and 1982 over 100 doctors were charge-sheeted for buying spurious drugs and for indiscipline and negligence. None was, however, dismissed. Another six doctors were arrested along with a drug manufacturer but all were ultimately let off. It was only when the Shahjahanpur malaria epidemic stunned the state that Tripathi decided on his clean-up.

But by then it was too late for an easy solution. When Tripathi began

punishing the offenders, he was threatened with strikes and dharnas and last month over half-a-dozen doctors' unions said they would paralyse the medical services of the state. Said Tripathi: "I am not one to be cowed down by threats. As health minister, if I can't prevent malpractices in the medical profession, I have no right to continue. Doctors are meant for giving a healing touch to people and not for creating an unhealthy environment." But, clearly, he is the only one who is convinced that he can succeed in doing that.

CSO: 5400/4713

NEGLECT CHARGED IN MALARIA ERADICATION EFFORTS

New Delhi INDIA TODAY in English 15 Apr 84 p 72

[Article by Prabhu Chawla: "Fatal Neglect"]

[Text]

THE PEOPLE of Shahjahanpur district had seen natural calamities before, but this was a nightmare. In a matter of two weeks, malaria allegedly claimed 600-odd lives in the district 200 km from Lucknow. The disease first struck seven months ago, but it has left the over 5 lakh inhabitants of the district's 118 villages panic-stricken. Local dispensaries housed in one-room buildings still receive over 100 patients every day for treatment of suspected malaria. Uttar Pradesh Health Minister Lokpati Tripathi admitted in the Assembly: "About 865 people died in Shahjahanpur due to various reasons. Whether all of them died due to malaria or something else is not confirmed."

In a major administrative move Tripathi dispensed with the services of four senior doctors including Dr R.C. Srivastava, district malaria officer, Shahjahanpur for their alleged "failure in taking preventive measures".

That appears to be an understatement. Every fifth family of Shahjahanpur either lost a member or was down with malaria for a period ranging from one to three weeks. Surprisingly, doctors were found to be absent from duty during the crucial period, and it was Congress(I) MLA Jagdish Singh who brought the deaths to the notice of the health officials. In a letter dated August 20, 1983, Singh wrote to the official in charge of Nigohi block Primary Health Centre

(PHC) that over 500 people had fallen victim to malaria and the condition of some of them was very serious.

But, till September 15, 1983, no medical treatment was available in these villages because, as a village pradhan put it, they were surrounded by knee-deep water and doctors were unwilling to go there. Sunder Lal, gram pradhan of Parsona village, says: "When villagers were dying one after another, no doctor was available at any of the dispensaries. When we asked for the medicines, we were told they were out of stock." Ram Shankar Lal, block pramukh of Nigohi block, adds: "For over six weeks between August 20 and September 30, 1983, no medical aid was made available to us. When it ultimately came, it was inadequate."

District Magistrate Lalit Srivastava sent a series of letters between August 16 and September 25, 1983, to the director of health services and various other agencies for immediate rescue operations. On September 30, 1983, the district's Chief Medical Officer K.K. Mudgil accompanied Srivastava on a tour of the district. Health officials blamed the deaths on an encephalitis and Japanese encephalitis epidemic which had hit the headlines in 1978 when a few hundred people died in Gorakhpur and Deoria.

On the other hand Health Minister Tripathi's high-powered team of doctors from K.G. Medical College, Lucknow, who examined over 100 patients of Nigohi block found no substance in this claim. In their report dated October 12, 1983, Dr U.C. Chaturvedi and Dr Dinker Chandra said: "None of the patients had symptoms and signs of encephalitis."

They concluded: "On the basis of large number of blood smear positive cases it appears definite that the population suffered from an epidemic of malaria." These conclusions were later confirmed by investigations conducted by various Central Government agencies like the Central Drug Research Institute.

Although health officials refuse to disclose the age-composition of those who died due to malaria, according to official investigations about 30 per cent were between one and 10 years old, 30 per cent between 10 and 45, and the rest above 50. A large number of female victims were pregnant.

At its peak, the epidemic affected all able-bodied men. To add to their misery, there was a shortage of fuel, and the poor villagers of Tilhar village had to bury their dead. Tota Ram, a landless peasant, died in September within three days of contracting malaria and since his family could not afford wood for cremation he was buried in the village. A day later stray dogs had dug up his body. It was only later, after district officials intervened that the body was properly cremated.

State government officials are now busy trying to identify the causes of the epidemic. Although they stoutly deny that the deaths were caused by malaria, the various investigating teams have confirmed that:

- The National Malaria Eradication Programme staff did not take preventive measures despite pre-warning.

- None of the 12 PHC's in Shahjahanpur district was provided with enough anti-malaria medicines.

- Though over 12,000 people were found to have positive malarial infection, a majority of them were not properly treated.

- While the guidelines provided for spraying of either DHC or DDT twice a year, over 40 per cent of the village houses were not sprayed even once.

- None of the wells was disinfected on a weekly basis, which is compulsory under the rules.

- Despite the heavy water-logging in the villages, the local health and sanitary officials did not spray the water with either DHC or DDT though enough stocks were made available to them from central stores.

On December 20, 1983, Tripathi directed the department to sack recalcitrant doctors. To avoid any legal problems, Dr C.P. Singh of the Nigohi PHC, Dr H.P. Srivastava of PHC Allaganj, Dr R.K. Maheshwari and Dr R.K. Awasthi both of PHC, Tilhar in Shahjahanpur district, received letters stating their services "were no more required by the state Government." The chief malaria officer was suspended for alleged negligence. Says Tripathi: "We will not allow anybody to play with the life of the people. If doctors they had better sit at home. After all, we must see to it that the people get reasonable health care."

The state Health Ministry has now made it compulsory for each person attached with the Malaria Department to stay at the place of work. Already over 2,000 government doctors have been asked to toe the line or resign. Says V.P. Sawney, state health secretary: "It should be a matter of grave concern for us. We must ensure that such things are not repeated in the future."

BRIEFS

SMALLPOX SUSPECTED--There have been about a dozen cases of suspected smallpox in the Danapore cantonment area and the Danapore Nizamat municipality, according to Mr. Moin Ansari, member cantonment board, Danapore, reports out special correspondent. In a communication to the Bihar health minister, Mr. Ansari has underlined the need for effective measures to combat the disease, which is assuming epidemic form, and for general improvement in sanitation in the cantonment and neighbouring areas. [Text] [Bombay THE TIMES OF INDIA in English 23 Mar 84 p 20]

CHOLERA OUTBREAK DENIED--MADRAS, March 22--Dr. H. V. Hande, Health Minister, today denied in the Legislative Assembly that there had been an outbreak of cholera in the southern parts of the State as a result of recent flood and rain. He said that out of 802 persons, affected by acute gastro-enteritis in Madurai, Ramanathapuram, Tirunelveli and Kanyakumari districts, 31 had died till March 15. Making a statement in response to a calling attention motion, tabled by CPI(M) and AIADMK members, Dr. Hande said precautionary measures had been taken in the primary health centres, and taluk and district hospitals to prevent cholera. At present the incidence of gastro-enteritis was under control. [Text] [Madras THE HINDU in English 23 Mar 84 p 12]

CSO: 5400/7092

BRIEFS

RABIES IN WEST SUMATRA--Out of 1,350 people bitten by dogs in the city of Padang, West Sumatra, 40 persons have been found to have contracted rabies, while six of them have died. This was stated by Sjahrul Ujud, master of laws and mayor of Padang, when he presided over the official opening of the operation to destroy stray dogs in Padang. The operation began on Friday, 24 February. According to the mayor, in November 1983 Padang was declared a rabies-affected area. Close supervision has been exercised since then regarding dogs entering and leaving Padang. In addition, pet dogs must be vaccinated and must be kept on a leash, in order to prevent the spread of rabies. Stray dogs will be destroyed by officials taking part in the operation. Police Brig Gen Dr Poedy Sjamsoeddin, West Sumatra provincial chief of police, said that the spread of rabies could disturb public order and security. It is hoped that not only officials but members of the public will participate in the operation to destroy stray dogs. [Text] [Jakarta KOMPAS in Indonesian 29 Feb 84 p 8] 5170

MALARIA INCREASING IN SOUTHEAST SULAWESI--It is not yet known for certain how many people have died as a result of the spread of malaria in the Pulau Wawonii District of Kendari Regency (Southeast Sulawesi). Two officials of the Southeast Sulawesi Provincial Office of Health who were contacted by a KOMPAS representative on Saturday, 25 February, stated that they could not provide any data because the question was being handled by the chief of the provincial Office of Health, who is still in Jakarta. Reports collected by KOMPAS state that more than 100 people have died, while another source said that at least 80 had died since November 1983. According to Dr Bagus Asiadi Sumbogo, the chief of the Kendari Regency Health Service, an operation to prevent the spread of the disease was launched in January, immediately after reports were received on cases of malaria. He said that the reports were delayed in reaching his office because of difficulties in communications to and from the island. The preventive operation is still continuing, with a mass distribution of medicine to the people, including both those who are suffering from the disease, as well as those who have not yet come down with malaria. In addition, the homes of the people are being sprayed with DDT. However, he was not prepared to provide precise data on the number of people who have died and suggested that this information be requested from the Southeast Sulawesi Provincial Office of Health. However, two officials of the provincial Office of Health said that they had no authority to provide such information. Engr H Alala, governor of Southeast Sulawesi, confirmed that there are cases of malaria in Pulau Wawonii District, when he was contacted by KOMPAS. Governor Alala declared that he had given orders to the Southeast Sulawesi Provincial Health Office to take preventive action against the disease and protect the health of the people of the area from

malaria. He said that the situation as of now has improved. The chief of the Kendari Regency Health Service said that the cases of malaria in Pulau Wawonii District do not constitute an outbreak of the disease, although there has been an increase in the number of persons suffering from it. According to information available to KOMPAS, there was an outbreak of malaria in 1978 in Pulau Talaga Village, Kabaena District, Buton Regency, which cost many lives. A total of 84 persons died over a period of 9 months. [Text] [Jakarta KOMPAS in Indonesian 2 Mar 84 p 8] 5170

DENGUE CASES IN WEST JAVA--In several areas of nine districts in Bandung Regency there have been outbreaks of dengue fever. About 116 local residents have come down with the disease, and two persons have died from it. The number of persons identified as suffering from the disease include one resident of Cisarua District, three residents of Cimahi Selatan District, three residents of Cimahi Tengah District, seven residents of Buahbatu District, two residents of Dayeuh Kolot District, eight residents of Cicadas District, one resident of Pemeungpeuk District, one resident of Banjaran District, and 90 residents of Ujungberung District. In Ujungberung District three persons suffering from the disease died as a result of too much delay in obtaining treatment, both at the local community health center, as well as at the local hospital. Meanwhile, Herry Ismail, the chief of community relations of Bandung Regency, told KNI [Indonesian National News Agency] that he could confirm that Bandung Regency is in the midst of a dengue fever outbreak. However, thanks to action by the Health Service of Bandung Regency, those affected by the disease have received proper care. According to Herry, the action by the Health Service to prevent the spread of the disease involved spraying every new house, which included 2,149 houses sprayed in all, and the distribution of 103.5 liters of Malathion insecticide, 623,297 liters of Coin-tiniere insecticide, and 52.29 kilograms of Abata insecticide. [Text] [Jakarta HARIAN UMUM AB in Indonesian 5 Mar 84 p 8] 5170

CSO: 5400/4400

DUBLIN BAY POLLUTION STUDY TO FOCUS ON HEALTH THREAT

Dublin IRISH INDEPENDENT in English 26 Mar 84 p 3

[Article by Bernard Purcell]

[Excerpt] THE Department of the Environment is to order a major study into the use of Dublin Bay.

The in-depth investigation will pay special attention allegations that Dublin's beaches are potential health hazards because of pollution, said Minister of State at the Department Mr. Fergus O'Brien last night.

"More than one million people use the bay every year and the report will cover it all from Howth to Killiney" he said.

He added that he had requested a full report of a seminar held in Dublin on Friday to discuss pollution and other factors affecting the amenity.

"The idea is to co-ordinate the groups that use it and discuss some type of management plan so that people get the maximum use and benefit from it," he said.

He added that he wanted it to become a community asset used by families as well as commercial interests.

Mr. O'Brien also disclosed that the Department of the Environment is drafting legislation to curb industrial air pollution. Since March 1 Ireland has been a signatory to an EEC directive committed to bring in such legislation by 1987.

The new law which it is hoped will be ready by the middle of next year, will involve issuing licenses to limit waste from industrial plants.

Those that will have to convert will include power stations greater than 50 megawatts; producers of non-ferrous metals; those engaged in disposal of toxic waste; and plant that manufacturers pulp by chemical methods with a capacity of 25,000 tons per annum.

Although the costs of converting plant can run into millions for some of the industries concerned special allowances will be made to ensure that the new regulations will not make exorbitant financial demands.

KWAPAI CHOLERA OUTBREAK LEAVES 3 DEAD

Nairobi THE KENYA TIMES in English 14 Apr 84 p 3

[Text]

Three people have died of cholera at Kwapai Location, in Ndhiwa Division, South Nyanza District following an outbreak this week.

The *Nation* learnt over 10 suspects have been admitted at Homa Bay District Hospital and Ndhiwa Health Centre.

The South Nyanza District medical officer of health, Dr J.E.O. Arwa, was said to have visited the area on Thursday with a team of medical officers in the homes where the deaths occurred.

The officers took swabs from the people in the surrounding homes.

The two men and one woman who died were said to have contracted the disease after eating at a funeral.

As a result of the outbreak the Ndhiwa DO, Mr Samuel Maina, has ordered all chiefs and their assistants in the division to make sure cholera victims were buried without feasting.

Mr Maina, who issued the order in a meeting at his office, also asked wananchi to stop shaking hands.

Efforts to contact Dr Arwa were fruitless yesterday as he was said to have gone to a seminar at Chulaimbo in Kisumu District.

However, an officer at the hospital, who accompanied Dr Arwa to the cholera-hit area, said they carried out educative lectures and the team was astonished by the absence of pit latrines in the area.

FLY-INVESTED KAMBWE VALLEY TO BE SPRAYED

Nairobi THE KENYA TIMES in English 18 Apr 84 p 3

[Text] The government is to spray the tse-tse fly-infested Lambwe Valley in South Nyanza district again.

To ensure that the programme succeeded, the government has approached international agencies dealing with insects for assistance.

The assurance was given at the weekend by a minister of state in the president's office. Mr Peter Otieno Nyakiamo, at Kambwe Secondary School in his Mbita constituency during a party hosted by people of Lambwe location in his honour for being elected Mbita MP and subsequent appointment as a minister of state.

The people complained that the tse-tse fly menace had increased owing to the nearby Ruma national park, affecting people and livestock in the area.

The minister, who called for peace and unity in the district, asked wananchi to register as Kanu members so that they could exercise their democratic rights in electing party leaders when Kanu elections are announced.

People, he went on, should intensify cotton growing and food crops production.

The minister, who was accompanied by the permanent secretary in the ministry of environment and natural resources, Mr Omolo Opere, promised to give Lambwe Harambee Secondary School shs. 4,500 from his next month's parliamentary allowance towards the payment of an extra teacher's salary.--KNA

CSO: 5400/124

EFFECT OF WAR ON HEALTH CARE SERVICES DISCUSSED

Paris AL-MUSTAQBAL in Arabic No 372, 7 Apr 84 pp 44-45

[Article: "Lebanon's War Brings Malady and Takes Away Cure"]

[Text] The past 9 years have inflicted serious damage on numerous health facilities in Lebanon, impeding the progress of their work. Three-fourths of the medical institutions, including clinics, hospitals and medical centers have been destroyed. In occupied South Lebanon, for example, all the government hospitals, totaling 4 in number, 10 private hospitals and 30 clinics were destroyed as a result of the Israeli invasion of Lebanon in 1978 and of the military activities witnessed by the south prior to that invasion.

The statistics indicate that the Lebanese public health sector has 13 hospitals and nearly 500 clinics spread throughout the various parts of Lebanon. Added to this number are 84 private hospitals which have contracts with the ministry, meaning that they admit patients at the expense of the ministry. A total of 270 clinics and 28 government hospitals have been destroyed completely. Moreover, one-half of the remaining medical institutions do not offer medical services because of the shortage of doctors, nurses, specialists and equipment, with the other 50 percent offering limited services.

As for medical centers, they are still non-existent, despite the directives made by the government development plans. Even if the government hospitals and clinics were undamaged and if they operated at 100 percent capacity every day, they would still be unable to meet the enormous shortage from which the various Lebanese areas, especially the capital, Beirut, were experiencing before the start of the Lebanese war. This is what has motivated the Lebanese organizations and parties to exert efforts to fill the medical gaps by setting up numerous clinics and medical care centers, not to mention the field hospitals which have amounted to nearly 400. These government and private medical institutions and centers have received throughout the tragic war a total of 167,000 people killed and 760,000 wounded, including 112,000 disabled persons, most of whom have been treated at the expense of the ministry. The costs have amounted to nearly 4 billion Lebanese pounds. During the war period, the Lebanese have paid for their medical care a sum of 14.5 billion Lebanese pounds. At present, there is

one hospital bed per 1,000 persons for serious cases, with a total of 190 such beds available in the government hospitals. This ration amounts to one half the required minimum. This is why the Lebanese citizen is suffering from the enormously high cost of treatment, medicine and medical care.

The medical sector also suffers from the shortage of doctors and skilled male and female nurses because the major part of these professionals have emigrated to work abroad.

To put it briefly, there is not in Lebanon at present a single center offering integrated and comprehensive preliminary and basic services, excluding a single hospital equipped with the best modern implements to keep pace with modern medical services. This is why the Lebanese Government needs to develop and improve its medical services swiftly, in addition to improving its ability to make use of the health sector services and to control the stunning rise in the cost of medical care by capacitating the Ministry of Health and by giving it the boost and momentum it needs. At present, only 690 beds are available at the government hospitals, including 62 beds in the city of Beirut. The Ministry of Health, through contracts with more private hospitals, has secured 1,200 additional beds daily to treat victims of the latest incidents at the expense of the ministry and at an annual cost of 10,000 pounds per bed.

Given the absence of official services and the Ministry of Health's reliance on the private hospitals to treat the people wounded and injured in the incidents, the owners of the Lebanese hospitals are demanding that the political forces work to neutralize the medical institutions, to spare them damage, to help these institutions and to supply them immediately with all the necessary materials they need to enable them to continue to perform their humanitarian mission which they are still performing under these difficult conditions.

Dr 'Adnan Muruwah, the Lebanese minister of health, has summed up to AL-MUSTAQBAL the difficulties experienced by the Lebanese medical sector, especially given the war, saying:

"Since independence and until the present, the health sector has not received the required attention. If we examine the budgets allocated for the Ministry of Health and for the departments under its control, we would find that these budgets are meager. Indifference toward the health sector is a pattern prevalent not only in Lebanon but also in most of the third world countries. We find that development is always focused on material development: developing factories and whatever pertains to man's material life at the expense of social development, i.e. at the expense of helping the destitute and the poor. This is why when the security fear disappears, the health policy adopted at present will be reexamined. There are [draft] laws that have been studied and approved by specialized committees. All they need is to be approved by the Council of Ministers. One of these laws calls for establishing health regions in Lebanon, meaning that every

200,000-200,000 people will have a health region, with a health council in which the region's prominent personalities are represented. Every 30,000 people within such a province will have a social center to secure all the needs of medical care and treatment for the war victims and for other citizens."

Concluding his statement to AL-MUSTAQBAL, Muruwah said: "Our concerns are focused at present on treating the people wounded and injured as a result of the battles, clashes and shelling. Almost all hospitals are nowadays treating the wounded at the ministry's expense. This is the least that the state can offer the Lebanese citizen who has suffered for 9 years and continues to suffer from the tragedy of homelessness and from the torture of displacement, destruction and shelling."

8494

CSO: 5400/4517

FOOT AND MOUTH DISEASE SPREADS TO HUMANS

Kuala Lumpur NEW STRAITS TIMES in English 29 Mar 84 p 5

[Text] Kuala Lumpur, Wed.--Foot-and-mouth disease in human beings, although relatively uncommon in Malaysia, has made its appearance here and in Petaling Jaya.

Doctors said that they have been treating several patients for the disease over the last two months.

However, the disease has no connection with the foot-and-mouth disease in cattle. It is neither dangerous nor fatal.

In animals, it occurs in all cloven-hooved livestock and is a major problem in many parts of the world because of its high mortality.

In human beings, the disease is caused by the virus Coxsackie. The patient gets vesticles (blisters) on his palm, sole, knees, elbows and buttocks along with ulcers in the mouth. The symptoms disappear within a week.

Blisters

The disease is more common in children than in adults. Sometimes the patient has a high temperature for two to three days.

A paediatrician in Petaling Jaya said the foot-and-mouth disease in humans is not harmful. Apart from the discomfort and pain, the patient is none the worse for contracting the disease.

"The disease has been in Malaysia for a long time and it occurs off and on throughout the country," he said.

"But over the last two months I have seen several such cases."

Another doctor said he had treated about 10 patients with this disease over the last two months, but he didn't give it much thought because the disease is not dangerous.

"It was just like treating a patient for an attack of influenza," he said.

If your child has ulcers in the mouth and blisters on the body it is best to seek medical advice.

A doctor said this could be easily mistaken for an attack of chicken pox.

Apart from taking medicine for the fever, a foot-and-mouth disease patient has to take a lot of liquids and cold food. One of the prescriptions is lots of ice cream.

CSO: 5400/4410

BRIEFS

DENGUE INFESTED REGION--Kuala Lumpur, Wed--Bandar Tun Razak in Cheras has been declared a dengue-infested area with three cases of dengue haemorrhagic fever reported since Feb 20. City Hall's Assistant Director of Public Relations (Press) Puan Zarina Ahmad Osman said today the cases were reported on Feb 20 and on Monday, involving a 31-year-old woman and two children aged nine and five. She also said that the Bukit Damansara and Sri Petaling areas were considered sensitive to the disease following two cases of dengue haemorrhagic fever reported on Feb 4 and Feb 20. There were five cases of dengue fever and four cases of dengue haemorrhagic fever reported in the Federal Territory recently. Puan Zarina said that 299 houses of the 15,582 houses inspected by the Health Department of City Hall were found to be breeding mosquitoes. She said that City Hall was carrying out fogging in the infected areas. She hoped that the public would co-operate with the authorities in combating the disease.--Bernama [Text] [Kuala Lumpur NEW STRAITS TIMES in English 8 Mar 84 p 3]

DENGUE CASES--Kota Kinabalu, Mon--Eight more suspected cases of dengue fever were detected in Sabah last week, bringing the total number of cases to 18 with one death since the beginning of the year. The State Deputy Director of Medical Services (Health), Dr Naranjan Singh, said today that 14 of the cases were dengue fever and four were dengue haemorrhagic fever. He said six of the latest cases were from Semporna and two from Sandakan. In Kuching, five more cases of suspected dengue fever were reported in the State during the last 48 hours, bringing the total number of cases to 359 since this year.--Bernama [Text] [Kuala Lumpur NEW STRAITS TIMES in English 27 Mar 84 p 4]

CSO: S400/4409

NIGERIA

BRIEFS

LEPROSY STATISTICS--The number of leprosy patients in Bauchi State is estimated at 20,000, out of which 16,000 are registered. The medical officer in charge of Bayara Hospital in Bauchi State, Dr. Martins Groota told the Military Governor Brigadier M. S. Sami when he visited the hospital recently. He told the governor that the hospital was built in 1952 by Missionaries, but that in 1976, it was taken over by the state government and from then, it assumed one status of a general hospital. [Excerpt] [Kaduna NEW NIGERIAN in English 7 Apr 84 p 11]

CSO: 5400/123

PEOPLE'S REPUBLIC OF CHINA

LI DESHENG AT ENDEMIC GROUP MEETING

SK070410 Shenyang LIAONING RIBAO in Chinese 21 Mar 84 p 1

[Text] The Leading Group for Prevention and Treatment of Local Endemic Disease of the CPC Central Committee held an enlarged meeting in Shenyang on 20 March.

Li Desheng, member of the Political Bureau of the CPC Central Committee and head of the Leading Group for Prevention and Treatment of Local Endemic Disease, presided over the meeting. Present at the meeting were Guo Ziheng, deputy head of Leading Group and vice minister of public health; Sun Weiben, secretary of the Liaoning Provincial CPC Committee; members of the Leading Group and responsible comrades of various provincial, city and autonomous regional endemic disease prevention and treatment leading groups.

Also invited to the meeting were representatives of relevant state departments and commissions and of some disease-afflicted regions.

The meeting summed up the situation and exchanged experiences in the nationwide endemic disease prevention and treatment work since 1981, examined the implementation of the 1982-1985 endemic disease prevention and treatment plans of the northern provinces, cities and autonomous regions, mapped out the 1984-1990 endemic disease prevention and treatment plans for the southern provinces, cities and autonomous regions, and studied ways to solve new problems in the endemic disease prevention and treatment work under the new situation.

At the meeting, Comrade Li Desheng read a namelist of the members of the Leading Group for Endemic Disease Prevention and Treatment of the CPC Central Committee which has been reorganized with the approval of the CPC Central Committee. Leading comrades of the Liaoning Provincial CPC Committee, the provincial government, and of the Shenyang PLA units, including Dai Suli, Quan Shuren, and Liu Zhenhua, attended the meeting and gave speeches.

CSO: 5400/4139

RENMIN RIBAO STRESSES ENDEMIC DISEASE PREVENTION

HK290857 Beijing RENMIN RIBAO in Chinese 27 Mar 84 p 1

[Commentator's article: "Vigorously Create a New Situation in Endemic Disease Prevention"]

[Text] Over the past 2 years or so, there has been a new atmosphere in China's endemic disease prevention work as a result of eliminating the "leftist" influence and implementing the policy of reform. Various localities have made uninterrupted efforts to overcome their shortcomings, such as "imposing unanimity" on work arrangements, the "slapdash manner" in leadership method, and "everybody eating from the same big pot" in the way of management. Quite a few localities have readjusted and strengthened the leading groups, revised plans, established perfect working organizations, and strengthening leadership over propaganda and scientific research work. Key members of the CPC Central leading group for the prevention and treatment of endemic diseases and the leading comrades of some provinces, municipalities and autonomous regions have gone deep into the areas afflicted with endemic diseases to make investigation and study and offer personal and effective guidance to solve practical problems and policy problems in the work of preventing and treating endemic diseases. From now on, we must continue to do a good job in this respect in a down-to-earth manner.

The areas afflicted with endemic diseases are widely dispersed, with a large number of patients. The conditions of some patients are very serious, which greatly endangers others. In the 28 provinces, municipalities, and autonomous regions of our country, not including Shanghai municipality, there are 1,630 counties in which one or several endemic diseases have spread, accounting for 65 percent of the total number of counties in our country. There are 36 million patients suffering from various endemic diseases, accounting for about 8.7 percent of the total population of the afflicted areas, and 420 million people, about half of the rural population, are imperiled by such diseases. We must never regard the work of preventing and treating endemic diseases as unimportant and treat it lightly.

The work of preventing and treating endemic diseases is a great cause which will benefit our future generations. It is an important matter concerning the quality of our population and the destiny of our nation, and an important link in ensuring the realization of the strategic targets put forth by the 12th NPC National Congress. It is also an important aspect in building

spiritual civilization. In order to strengthen party leadership over the work in this field, the CPC Central Committee has decided to establish a leading group for the prevention and treatment of endemic diseases. Getting rid of poverty and treating diseases are closely interrelated and promote each other. Numerous facts have proved that in those areas where a good job has been done in the prevention and treatment of endemic diseases, the number of patients has dropped and production has been promoted. Leading comrades of the CPC committees and governments at all levels must take resolute measures in accordance with the requirements of the central authorities and bring the work of preventing and treating endemic diseases into line with their plans for the construction of the four modernizations, and must work out concrete steps and feasible measures for the coming 2 years to fulfill their plans. The Gansu Provincial CPC Committee has decided to take the prevention and treatment of endemic diseases as one of the 12 main tasks for 1984, and the Shaanxi, Jilin, Heilongjiang, and Liaoning Provincial CPC Committees have taken it as an important task in building civilized villages. They are all doing very well in this respect.

However, the leading comrades in some localities fail to gain a sufficient understanding of the great significance of preventing and treating endemic diseases. Some of them wrongly hold that endemic disease is a kind of chronic disease and that the patients will not die, and have treated the matter lightly, while some others have regarded it as a matter merely for the departments in charge of vocational work. Thus, although leading groups have been established in these areas, they have rarely carried out the work. In some localities, the leading groups have not been established even to this day. Their organizations are imperfect and for a long time, nobody has taken charge of the work of prevention and treatment of endemic diseases. In some other localities, a good job was done for several in the past years; however, when the conditions were just taking a favorable turn, the leadership there was relaxed, and the conditions began to worsen again. All this must be resolutely corrected.

The work of preventing and treating endemic diseases covers a very wide range of fields. It cannot be done well merely by the efforts of medical and public health departments. Only when unified party leadership is strengthened and working organizations at various levels are established and perfected can we make overall arrangements and solve various problems. The implementation of the system of contracted responsibilities with payment linked with output in the countryside has provided favorable conditions for the prevention and treatment of endemic diseases. Provided we adhere to the mass line, guide the people in the afflicted areas to persevere in implementing various prevention and treatment measures while developing production, a new situation will surely emerge in the work of preventing and treating endemic diseases.

PRAZIQUANTEL IN SCHISTOSOMA JAPONICUM INFECTIONS

Beijing CHINESE MEDICAL JOURNAL in English No 1, Jan 84 pp 47-52

[Report by Fu Fu-yuan, Zheng Jia-shun, Chen Wei-qing, Qin Ke-shu, Jin Meihing, Liu Xian, Wang Qing-liang and Lu Song-ci]

[Text]

Expanded trials of praziquantel in schistosoma japonicum infections to assess the drug tolerance of a larger sample of patients treated largely under field conditions, of advanced schistosomiasis patients and of those having concurrently a wide variety of other diseases are reported. Altogether 716 cases were treated, among whom 47 were advanced cases with splenomegaly or schistosomal liver cirrhosis with or without ascites. 193 had concurrently diseases of various other etiologies. All the series were given the same dose regimen: 10 mg/kg tid 2 days. Tolerance was good in all, the only severe toxic side effect necessitating withdrawal of treatment was generalized urticaria. Neither clinical nor biochemical evidence of hepatotoxicity or cardiotoxicity was observed except for slight and transient posttreatment electrocardiographic changes in a few. Drug tolerance of advanced schistosomiasis cases is stressed in the light of the role played by the liver in the biotransformation of chemotherapeutic agents.

Preliminary trial use of praziquantel in patients with schistosoma japonicum infection was conducted at this institute in 1978 and therapeutic efficacy was confirmed. An expanded trial, mostly under field conditions, was carried out since 1979 to test drug tolerance in a larger population, as rare but important side effects may not be detected in a limited number of patients. In this expanded trial the more advanced cases with liver

cirrhosis and portal hypertension were included to see if liver function impairment and/or altered portal hemodynamics influence drug tolerance.

Also included in the trial were patients with coexisting hepatic, cardiovascular, gastrointestinal, neuropsychologic diseases. Patients with active myocardial disease or evidence of progressive liver function deterioration were excluded. The assessment of tolerance of advanced cases is of practical importance since a fairly large percentage of patients requiring treatment were intolerant of other forms of chemotherapy.

CLINICAL DATA

Patients included were from formerly endemic areas. The diagnosis of schistosomiasis was ascertained by history of exposure in known endemic areas plus positive stool hatching and/or positive circumoval precipitin test or a positive *Schistosoma japonicum* ova biopsy specimen. A total of 716 patients were treated (392 male, 324 female). Their age ranged from 16 to 75 years, with the majority (536, 77.7%) between 16 and 59. Of the series, 287 had positive stool hatching, 357 positive circumoval precipitin test and in 72 *Schistosoma japonicum* ova were found either in rectal biopsies or other tissue specimens obtained during surgery.

As most patients had received one or more courses of chemotherapy previously, the overall intensity of infection was quite low. Stool miracidium counts were performed (expressed as number of miracidia per 20 gm feces). The results in 112 were: 1-5 miracidia 79; 6-10 miracidia 18; 11-20 miracidia 12; and over 20 miracidia 3.

According to clinical presentations patients were classified into: Group A, chronic asymptomatic schistosomiasis 476 with little evidence of pathologic change or overt clinical manifestations aside from occasional mild hepatosplenomegaly. Group B, advanced schistosomiasis 47. This includes schistosomal liver cirrhosis with liver function impairment and ascites in 11 and splenomegaly 36, of whom 26 had had the spleen removed and 1 portacaval shunt. 12 of 17 showed radiologic evidence of esophageal varices; serum γ -globulin was increased in all (25 to 40% of total serum protein) and reverse serum albumin-globulin ratio was seen in one third. Group C, chronic asymptomatic schistosomiasis with coexistent chronic persistent hepatitis 23. The duration of viral hepatitis ranged from 4 to 16 years and frequent fluctuations of SGPT values were attended by mild to moderate hepatitis symptoms. SGPT values were above normal in 11 on admission (43-104 King units). Group D, chronic asymptomatic schistosomiasis with concurrent cardiovascular, gastrointestinal, respiratory, neuropsychologic and other disorders 170 (Table 1).

TREATMENT AND METHOD OF EVALUATION

Praziquantel, supplied by the Institute of Parasitic Diseases and the Shanghai Sixth Pharmaceutical Company was given at 10 mg/kg body weight tid for 2 consecutive days (total dose 60 mg/kg body weight). The drug was given before meals and the doses spaced at not less than 4 hours apart.

All patients were given a thorough physical examination and routine blood test on admission. In the initial trial, biochemical

Table 1. Patient clinical presentation

Group	Clinical forms	Cases	Total
A	Chronic asymptomatic schistosomiasis		476
B	Advanced schistosomiasis with splenomegaly	36	
	Schistosomal cirrhosis and ascites	11	47
C	Chronic asymptomatic schistosomiasis with chronic persistent viral hepatitis		23
D	Chronic asymptomatic schistosomiasis coexisting with cardiovascular disorders		37
	Hypertension	12	
	Premature beats	13	
	Coronary heart disease	2	
	Auricular fibrillation	1	
	A-V heart block	1	
	RBBB	4	
	Rheumatic heart disease	3	
	Pulmonic stenosis	1	
	Gastrointestinal disorders		36
	Peptic ulcer	17	
	Gastritis	1	
	Biliary tract disease	12	
	Chronic colitis	8	
	Intestinal tuberculosis	1	
	Renal disease, chronic glomerular nephritis		3
	Respiratory disease		50
	Asthma	4	
	Pulmonary tuberculosis	13	
	Emphysema	6	
	Bronchiectasis	2	
	Chronic bronchitis	25	
	Neuropsychologic disorders		36
	Schizophrenia	4	
	Hysteria	4	
	Neurasthenia	17	
	Postencephalitic and posttraumatic cerebral syndromes	8	
	Epilepsy	2	
	Cerebral form schistosomiasis	1	
	Miscellaneous affections		8
Total			718

Table 2. Symptoms before and after praziquantel treatment

	Chronic schisto- somiasis* (476 cases)		Advanced sch- istosomiasis (47 cases))		Chronic schistosomiasis coexisting with			
	Before	After	Before	After	Hepatitis (23 cases)		Other diseases (170 cases)	
					Before	After	Before	After
Central nervous system								
Dizziness	38	112	9	16	0	6	36	47
Headache	21	75	0	5	0	0	13	32
Vertigo	3	16	0	2	0	2	7	19
Blurring of vision	0	11	0	1	0	0	0	0
Drowsiness	0	10	0	0	0	0	0	4
Neuromuscular system								
Lassitude	5	56	0	2	2	6	6	19
Myalgia	8	68	1	2	1	1	3	37
Digestive system								
Nausea	0	34	0	3	0	1	4	22
Abdominal pain	8	43	1	3	0	1	3	12
Cardiovascular system								
Palpitation	7	26	1	5	0	1	7	13
Premature beat	3	8	0	1	0	0	3	11
Cutaneous reactions								
Urticaria	0	2	0	1	0	0	0	0

* 176 (36.9%) of the patients treated had no complaints.

studies including serum bilirubin, alkaline, phosphatase, SGPT and SGOT, creatine phosphokinase, lactic dehydrogenase, blood creatinine and urea nitrogen were performed. Blood eosinophil, reticulocyte and platelet counts were also taken. All tests were repeated at the end of treatment and thereafter whenever indicated. ECG recordings were also taken before and after treatment. In subsequent field trials, emphasis was placed on drug tolerance and only selected routine tests were performed; blood biochemistry and electrocardiographic tracings were performed only when indicated and feasible.

Patients with advanced schistosomiasis complicated by ascites were first given pertinent medical treatment and then praziquantel when the clinical condition had stabilized.

Patients were observed for 3 to 5 days after treatment and in advanced cases observation was extended to over 1 week.

RESULTS

Tolerance. Table 2 shows the overall frequencies of untoward symptoms in patients receiving praziquantel. It is obvious that the Group A data are more objective for assessment of drug-related side effects, as symptoms of other concurrent diseases are not present as in the other groups. Of the 476 chronic asymptomatic patients (Group A) receiving treatment 177 (37.2%) were completely symptom free; 299 (62.8%) of this group had one or more drug-related complaints. Although the complaints were frequent and varied, most were mild and transient, requiring no treatment.

Of the series, severe drug reactions necessitating ending of treatment occurred in only 2, both due to severe extensive urticaria.

Central nervous system and neuropsychologic reactions. The most frequent central nervous system symptoms were dizziness, headache and vertigo, appearing usually an

hour or so after the first dose, in most they were mild and subsided within 1 to 3 days after treatment. Blurred vision was complained of in individual cases. Subjects with preexisting neuropsychologic disorders showed no aggravation. One of those with history of acute psychotic attacks became disoriented and delirious at the end of treatment but recovered on symptomatic treatment within 24 hours. It was not certain whether praziquantel was the triggering factor for this acute psychotic attack. In a case of cerebral schistosomiasis with periodic epileptic attacks of 2 years standing, aggravation of headache for a few days posttreatment was the only drug-related side effect observed.

Gastrointestinal symptoms. Appetite was not impaired and nausea was infrequent in most, while vomiting attributable to the drug was not observed. Abdominal pain, without definite localization, experienced by a few was also mild and self limited.

Cardiovascular symptoms. The main complaints were heart palpitations and premature beats. Palpitation was not associated with any change in heart rate or electrocardiographic abnormalities and in cases with premature beats the electrocardiograms were otherwise normal. Patients with organic heart disease and cardiac rhythm disturbances before treatment did not show signs of exacerbations. A patient with pulmonic stenosis developed paroxysmal junctional tachycardia 2 hours after the first dose of praziquantel. Careful inquiry into the history revealed that the patient had experienced similar attacks before. Treatment was resumed 2 days after the attack subsided, and completed uneventfully.

Cutaneous reactions. Urticarial skin rash was rare, but 2 cases with severe and extensive urticaria had to discontinue treatment. The first case developed urticaria shortly after the first dose and was persuaded to take another dose after the lesions subsided, but severe extensive urticaria recurred, and was forced to stop treatment. Urticaria

accompanied by angioneurotic edema of the lips and face was observed in the second case following the fourth dose so the drug was immediately withdrawn.

General lassitude, limb weakness, especially of the legs and myalgia were frequently complained of. These symptoms became evident on the second day of treatment and may last 3-5 days after treatment.

There were no genito-urinary or respiratory symptoms. No febrile reactions were observed.

In general, all groups of patients tolerated the drug equally well.

Laboratory findings. Except for a moderate increase in eosinophils in about half of the patients, the posttreatment leucocyte, reticulocyte and platelet counts did not show significant differences from the pretreatment values.

In Groups A and D there were no differences between the pre- and posttreatment values of serum bilirubin (102 cases), alkaline phosphatase (31), creatine phosphokinase (25), lactic dehydrogenase (29), SGOT (89), blood creatinine (15) and urea nitrogen (15). SGPT was elevated in 9/377 on admission (51-69 units) but normalized in all posttreatment.

SGPT was determined in 30 advanced cases, it was normal in 29 and 100 units in 1 before treatment; posttreatment values were normal in all. No changes were seen in the posttreatment values of serum CPK and LDH (6 cases each).

In patients with coexistent chronic persistent hepatitis the posttreatment creatine phosphokinase and lactic dehydrogenase values of 10 were within normal limits. Of 14 with normal SGPT before treatment, the posttreatment values remained unchanged in 11; 3 showed moderate and transient rises (48-65 units) the week following medication, which fell to within normal limits by the end of the second week. Of the 9 with elevated SGPT pretreatment (43-104 units), the

Table 3. Circumoval precipitin test pre-and posttreatment

	Cases examined	Negative cases	Positive circumoval reactions (cases)				
			1-4°	5-9°	10-19°	20-29°	≥ 30°
Before treatment	66	0	5	20	23	9	7
9-12 months posttreatment	51	15	25	9	2	0	0
2.5 yrs posttreatment	48	25	21	6	2	0	0

values normalized in 7, while that of the remaining 2 were unchanged (43 and 51 units pretreatment, 46 and 67 units posttreatment).

Electrocardiographic changes. The pre- and posttreatment ECGs of 157 patients were analyzed. Of 117 in Group A with normal ECG before treatment, the posttreatment ECG showed S-T depression in 2 (0.05-0.1 mv), T wave changes in 2 and ventricular premature beat in 1. Of the 9 with ECG abnormalities pretreatment (premature beat 5, right bundle branch block 4), the posttreatment ECG revealed transient S-T depression in 1. Of 18 with normal pretreatment ECG in Group B, slight and transient T wave inversions were recorded in both the standard and precordial leads in 3 and ventricular premature beat in 1; 1 with S-T depression before treatment showed normal ECG after treatment. The ECGs of 6 with coexisting chronic persistent hepatitis were all normal after treatment.

No significant alterations were seen in the posttreatment ECG in 6 with organic heart disease (coronary heart disease 2, pulmonary stenosis 1, A-V heart block 1, rheumatic heart disease 2).

The S-T changes were frequently seen in leads V4-V6 and T wave changes in leads aVR, aVF, V3-V5, II and III. These changes were transient and usually returned to normal in 3 to 5 days. They were not accompanied by other signs of cardiotoxicity.

Therapeutic efficacy. Patients with positive stool hatchings on admission were followed up for parasitologic evaluation. At 3, 6 and 12 months posttreatment 93, 87 and 55 patients were reexamined parasitologically by 3 consecutive stool hatchings each. 93 (100%),

86 (98.8%) and 55 (100%) were negative. The patient who remained hatching positive at 6 months posttreatment was not available for reexamination at 12 month follow-up.

Results of circumoval precipitin test are shown in Table 3. Over 95% (46/48) of the patients with either serologically negative or had markedly diminished intensity of precipitation reaction at 2 years and 6 months after treatment.

DISCUSSION

Both laboratory experiments^{1,2} and initial clinical observations^{3,4} show that praziquantel is highly effective against *schistosoma japonicum* infections. Side effects are generally mild and transient. In this trial severe extensive urticarial rash was the only drug-related side effect necessitating drug withdrawal. Other serious reactions encountered are acute attacks of paroxysmal tachycardia and acute psychosis, but it is not certain whether praziquantel is the trigger of these attacks. No posttreatment alterations in biochemical or hematologic parameters were observed.

It was suggested that more serious side effects or reactions may occur in advanced schistosomiasis⁵ than in milder forms, as praziquantel biotransformation takes place in the liver.⁶ In advanced cases with liver cirrhosis and portal hypertension, praziquantel biotransformation is impaired, thus exaggerating drug reactions. However, no serious toxic side effects were observed in our advanced schistosomiasis cases, even in those complicated by ascites.

Chemotherapy is important in active schistosomiasis regardless of the stage of the

disease, as further pathologic changes can be averted through elimination of the schistosomes, prevention of new ova deposition and granuloma formation in the host liver. Heretofore in advanced cases chemotherapeutic agent has been limited due to frequent serious toxic side effects; however, the present trials show that praziquantel, when given to properly selected cases, is fairly well tolerated and carries less risk.

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CSO: 5400/4140

IMPROVED TECHNIC FOR DENGUE VIRUS MICRO CELL CULTURE

Beijing CHINESE MEDICAL JOURNAL in English No 1, Jan 84 pp 73-74

[Article by Zhu Guan-fu, Liu Zi-hui and Wang Jin]

[Text]

An improved culture technic for dengue viruses, i.e. the use of adapted mosquito cells incubated at 36 C in a culture medium of pH 6.8, is tested and found to be of practical use in the laboratory diagnosis of dengue virus infections.

Dengue viruses have been known to grow well on mosquito cells (*Aedes albopictus*, C6/36 clone). This culture method, however, has not been adopted as a routine

laboratory technic as its cytopathic effect (CPE) is not always satisfactorily demonstrable.¹ This is no surprise since the optimal temperature for virus cultivation is 36 C, while growth and passage of the mosquito cells occur at 28 C. In 1979, Tesh² reported that the development of dengue virus antigen in mosquito cell cultures is faster at 32 C than 28 C. We have demonstrated that incubation at 36 C in a culture medium of pH

Table 1. Titers* (TCID₅₀/0.05ml) of dengue viruses under different culture conditions

Types of dengue viruses	28 C		32 C		36 C	
	pH 6.8	pH 7.2	pH 6.8	pH 7.2	pH 6.8	pH 7.2
1	—**	—	2.62	2.50	2.50	1.75
2	1.25	0.25	3.75	3.37	4.75	2.50
3	—	—	1.87	1.62	3.90	2.87
4	—	—	1.62	0.50	2.75	1.50

* Mean value of 4 tests.

** No obvious CPE after inoculation of 10-1 virus

Table 2. Titers* (TCID₅₀/0.05ml) of dengue viruses in AC** and OC*** under different incubation conditions

Types of dengue viruses	28 C		32 C		36 C	
	AC	OC	AC	OC	AC	OC
1	—****	—	2.50	1.50	2.62	2.00
2	2.25	2.50	2.50	2.25	4.25	2.62
3	1.12	—	4.38	2.50	3.75	4.88
4	0.88	—	4.00	2.00	3.50	4.75

* Mean value of 4 tests.

** Cells adapted to propagating at 36 C.

*** Original cells propagating at 28 C.

**** No obvious CPE after inoculation of 1/10 virus after 6 days' incubation.

6.8 yields characteristic CPE (Figs 1-3) and higher virus titers (Table 1). We managed to adapt mosquito cells to this relatively high temperature for growth and passage. The initial passages showed signs of cellular degeneration, with many vacuolated cells seen (Fig 4). As the passages went on, however, the cells gradually recovered normal state. The adapted cells were again tested in a pH 6.8 culture at different incubation temperatures and compared with the original mosquito cells. Once again a 36 C incubation temperature was found to be most desirable. At this temperature virus growth is better in the adapted cells than in the original ones (Table 2).

During an outbreak of dengue fever in the Hainan Island in 1980, this culture technique was used with an isolation rate as high as 95% (42/44) from patient sera taken within 3 days after onset of symptoms. This shows that our culture technique is of practical significance in laboratory diagnosis of dengue virus infections.

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CSO: 5400/4140

BRIEFS

NATAL CHOLERA OUTBREAK--DURBAN--Three people have died of cholera in the past week and at least another 70 have been treated for the disease which has flared up in the Maphumulo area, north of Stanger, on the Natal North Coast. A spokesman for the KwaZulu Department of Health said although the incidence of cholera had dropped to less than a quarter of cases at the height of the epidemic two years ago, isolated pockets could be expected. Residents of areas which had not been affected in the past had not built up a natural immunity and were more likely to be affected. The names of the dead are not available, but the spokesman said they came from a rural area which was not within easy travelling distance of clinics or hospitals. They all died at home. A health education team was now touring the area and it was expected that this week's cholera figures would be considerably lower. "Overall cholera has reached the endemic stage. I believe we will always have it with us but it is under control." [Text] [Johannesburg THE CITIZEN in English 5 Apr 84 p 15]

CSO: 5400/120

BRIEFS

HEALTH CENTER FUNDING--SOME \$900,000 in repair work and equipment will be needed in the next fiscal year in order to upgrade the is'and's 29 district health Centres. This finding is the result of recent visits paid to the centres by Minister of Health and Housing Allan Bousquet and Permanent Secretary, Mr. Cornelius Lubin. The tour was undertaken in in order to acquire information on existing conditions so that necessary provisions can be made in the 1984/85 Capital Estimates for improvements to the Centres. "While conditions at some Health Centres have been rated as satisfactory, due mainly to maintenance work by district Health Committees, the majority are badly in need of electrical, plumbing and other structural repairs," Mr. Lubin said. At the end of his four-week tour, the Minister commended District Nurses and other Health Centre staff for their achievements in the face of difficult conditions which he said, Government was determined to remedy. He also said that his Ministry planned encourage the expansion of District Health Committees to assist in maintaining high standards at the Centres. These voluntary groups have been responsible for substantial improvements in community health over the past five years. [Text] [Castries THE VOICE in English 21 Mar 84 p 1]

CSO: 5400/7553

SCOPE OF RABIES PROBLEM EXAMINED

Bangkok SU ANAKHOT in Thai 19-25 Feb 84 pp 46-47

[Article: "Rabies Has Reached Epidemic Proportions Again"]

[Text] Although rabies is a disease that can be easily controlled, compared to many other diseases, one thing that people involved with this disease are convinced of is that the situation is not improving nor is the incidence of the disease decreasing to their satisfaction. Statistics on people who die of this disease have still continued to be as high as 300-350 people per year over the past 10 years, with an average of 40,000-50,000 people per year receiving inoculations after being bitten by animals having or suspected of having rabies. It is not certain whether the statistics on people receiving inoculations or losing their lives to rabies will increase or decrease. It is evident that we cannot be certain of maintaining current levels or controlling the disease.

The reason we cannot be certain of controlling the disease, in the view of Veterinarian Wara Misombun of the Division of Control of Diseases from Contacts Between Humans and Animals of the Ministry of Public Health, is that we cannot yet control for certain the vaccination of animals that are the carriers of the disease. The animals that carry this disease in Thailand are not only dogs, as the name of the disease [in Thai] suggests, but also includes cats, gibbons, and monkeys. Among the dogs themselves, there is also the question of the number that are vaccinated against this disease, approximately 300,000 per year out of approximately 10 million dogs in the whole country. To really control the disease we should be able to vaccinate 70 percent of the total number. Furthermore, for this preventative vaccine to be effective it should be given to dogs at the same time if possible. That is, there should be a set 2-week period during which all dogs are vaccinated, rather than vaccinating them all year round as at present. The effectiveness of this is uncertain because if a dog that has been vaccinated is in contact with or bitten by one with the virus, it may catch the virus again.

For other animals that are carriers, like cats, gibbons, and monkeys, there will be a control law stating that owners must take the animal to get a preventative vaccination. At present, amendments and changes to this law are being considered before it is submitted to the assembly.

The reason for writing this is because from the end of February until the beginning of May is the period when the disease spreads a lot. Even though it

can be said that rabies is a disease that occurs year round and that there is an epidemic season in August and September as well, from the end of February until the beginning of May is a perfect time for the disease to spread because it is the period when the schools are closed and the children have the opportunity to come into contact more easily with animals that are carriers of the disease. Studies have shown that the ones who are most at risk of catching rabies are children from 5 to 15 years, that is children just below school age and those of primary school age, who still cannot help themselves much, and the majority are male--almost twice as many as females.

Therefore, there has been a recommendation to all teachers and schools to inform the children before vacation to be careful of rabies, and particularly about contact with cute little puppies, most of all those whose mothers have died and whose histories are unknown as to whether or not they have been vaccinated. And the children should especially not take them home to raise, because if the mother died of rabies, the virus is probably still living in the puppies and can be passed to humans.

From studies of data on people who have had preventative vaccinations for rabies and people who have died of the disease, it has been found that almost all had contracted the virus from dogs, and over half were pets with owners. It is important that no small number of those who died had contracted the virus from dogs under 3 months old.

In addition, care must be taken in buying the puppies sold at Chatuchat Park or in pet shops. At the least, before buying one, look at the history as to whether it was vaccinated between the ages of 2 and 3 months.

The passing of the virus from mother to offspring or the spread of the disease in groups of dogs derives from the natural breeding of dogs twice a year, in mid-May to June and November to January. During the breeding seasons the female and male dogs, both those with and those without owners, go out and compete for mates, biting and fighting with each other. If by chance there is among them a dog in the period to spread the virus, it will have the opportunity to spread the virus to many other dogs. After acquiring the virus, there is an incubation period, generally of 1 to 3 months before symptoms appear. If the virus is acquired in the first breeding period of May-June, then symptoms appear in August-September. If the virus is acquired during the cold season breeding period, symptoms will appear in February-May--that is, during this time--and the offspring will receive the virus from the mother.

Anyone who has never directly experienced the need to be inoculated with a series of 14 or 21 needles, and then maybe another 3, probably is receiving this information without any great interest. But for those who have small children or grandchildren who have cried out in pain from the wounds of the shots, there is almost no spirit of love left for the ordinary dog. It has happened that some people having the inoculations who are afraid of needles and think it does not matter, stop the shots before fulfilling the stipulation and lose their lives. Some who were bitten and received severe wounds or wounds near the head must also have a shot of a special serum and a protective vaccine or toxoid for tetanus as well. But no matter how many more shots are needed, if you really are bitten, follow the instructions of a doctor, or else you may be one of the over 300 cases.

Problems that may follow vaccination appear to include reactions to the vaccine which can cause death, of which there are seven to eight cases per year. Some cases have only nervous system symptoms: the limbs have no strength, the head aches a lot, urination and excretion are impeded or, more severely, paralysis on one side, half the body or the whole body, requiring hospitalization and treatment, which may disappear in 1 to 6 months. But what is most fearful is that of those getting the full correct series of vaccinations on time, .01 percent to .02 percent or 1 or 2 people in 100 still die.

Therefore, the best thing when bitten by a dog [that may be] carrying rabies is to take the head of the animal that bit you for a post-mortem examination in the operation room so that the results are known first. This is the safest method. There may not be the question of reaction to the vaccination, with advice after being bitten to wash the wounds immediately with soap or detergent and water for 15 to 20 minutes to get germs out before they enter cells.

In any case, there have been computations of economic losses from people receiving vaccinations to prevent rabies, considering the figures for expenses at the lowest rates--that is, without expensive vaccines from abroad that some people who have been bitten get at clinics--which may decrease the price to 10,000 baht a head for adults and 6,500 for children, not including the cost of cases of reactions to the vaccine who may need hospitalization for months. I would estimate the economic losses from people receiving vaccinations to prevent this disease in the whole country to be as high as 30-35 million baht per year. But if economic losses are considered all together, including the eradication of wild dogs, the cost of publicity, gas, poisons, the cost of vaccine production, etc., the cost of the losses is no less than 100 million baht per year.

Therefore, although those concerned with the problem of this disease probably still claim that they are really making plans for control and that eradication of this disease is still within the limits of our abilities because even though we know the carriers of the disease, we still have not been able to wipe it out. For this I do not know whether to blame the dog suppression units of Metropolitan Bangkok or the Ministry of Interior, because this problem is also present in dogs without owners. Do we blame the officials' lack of dedication in catching them or the government for not really carrying out suppression smoothly?

What is important is that you yourselves take care not to contact saliva or teethmarks of the ordinary dog at this time.

Table: Statistics on People who Died from Rabies by Sex and Age, 1976-1981

<u>Age (years)</u>	<u>Sex</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Total	Male	210	211	219	181	249	221
	Female	94	116	117	121	121	118
Below	Male	12	14	23	9	16	16
	Female	5	6	7	10	8	12

5-9	Male	53	50	39	35	54	49
	Female	27	22	27	25	22	25
10-14	Male	47	43	46	41	53	54
	Female	10	15	24	24	19	13
15-24	Male	29	25	29	23	39	26
	Female	11	22	15	10	16	11
25-34	Male	17	22	28	17	20	22
	Female	8	7	5	8	13	11
35-44	Male	14	13	20	15	21	21
	Female	6	12	13	11	11	16
45-54	Male	13	16	24	17	22	14
	Female	7	10	11	12	13	14
55-64	Male	9	13	8	12	8	6
	Female	9	8	8	15	10	7
Over 65	Male	11	10	11	9	15	13
	Female	7	11	6	5	8	9
Unknown	Male	15	5	1	3	1	-
	Female	4	3	1	1	1	-
Grand Total	Male + Female	304	327	336	302	370	339

Source: Public Health Statistics Division, Office of the Deputy of the Ministry of Public Health

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LIVER FLUKE TREATMENT CENTER TO BE ESTABLISHED

Bangkok SIAM RAT in Thai 2 Feb 84 pp 1, 12

[Article: "Expansion of Liver Fluke Treatment Centers to the Northeast"]

[Text] Preparations are under way to expand liver fluke treatment centers to the northeast. People will not have to go to the trouble of coming to Bangkok for treatment.

Dr Winit Atsawasena, director of the Department of Communicable Disease Control, told SIAM RAT that during 1984 the department is preparing to expand its clinics for liver fluke treatment into the northeast, first setting up two centers in Khonkaen and Sakon Nakhon provinces and then expanding into Ubon Rachathani, Nakhon Rachasima, and Udonthani. The opening of clinic centers for the care of liver flukes in these provinces will help the people in the northeast by eliminating the need to travel to Bangkok.

Dr Winit said that the problem to be concerned about in the treatment of liver flukes among the villagers is changing their food hygiene, which is extremely difficult to do. Although we have tried to educate the villagers in hygiene for over 30 years, we still have not been able to change their eating habits. The villagers in the northeast like to eat raw fish "koi," which allows the flukes to enter the body, and treatment with drugs is only an end treatment. And the price of treatment of this disease is very expensive at 75 baht per pill, and each person must take approximately 4 pills. Therefore, the price of treatment falls around 300 baht, and if after they are cured people go back to eating raw fish koi, they will get the disease again. Therefore, the treatment must emphasize educating the people as well.

In any case, Dr Winit said that the Ministry of Public Health is now discussing buying the medicine through the World Health Organization to lower the price to 23 baht per pill and 100 baht per person for the treatment. At present the cabinet has approved 2.5 million in aid, which is expected to cover the treatment of 200,000 to 300,000 people.

Dr Winit went on to say that in the budget for 1985 the department is prepared to budget another 27 million baht for the treatment of this disease.

The symptoms of liver flukes cause the afflicted person loss of appetite, weakness and fatigue, yellowing of the skin and after a long time hardening of the liver, and finally death.

MALARIA OUTBREAK ON PRK BORDER REPORTED

Bangkok DAO SIAM in Thai 31 Jan 84 pp 1, 2

[Article: "Outbreak of Drug-Resistant Malaria on the Border"]

[Text] A heavy outbreak of "drug-resistant malaria" on the Thai-Kampuchean border [has been reported]. The Deputy of Interior has written urgent letters to the provincial governors of seven provinces on the Kampuchean border to find ways to suppress and prevent the disease before it spreads. If it is not in their power, they should request aid from the center right away.

At the Ministry of Interior on the afternoon of 30 January, Mr Khamron Bunchoet, director of general headquarters, S.P., revealed to reporters that Mr Bunnat Saisawang, provincial governor of Chantaburi Province, reported to the Ministry of Interior that there is now a large outbreak of malaria in the vicinity of Pongnamron District, Chantaburi Province. From investigation it appears that the malaria virus, which is drug-resistant, can easily become epidemic. Therefore, the Ministry of Interior has asked for cooperation from the Ministry of Public Health and the Thai Red Cross to consider sending a team of doctors from the center to investigate and treat it.

The Ministry of Interior has considered this [plan] and believes that carrying it out would increase the security and strength of the military personnel working in the border area and of the Thai people living along the border. In addition, it would also be advantageous in maintaining the morale and will of the military personnel and the people. Therefore, for consideration for aid, Mr Charoenchit Na Songkhla, ministry assistant deputy, acting for the deputy of the Ministry of Interior, wrote a letter to the governors of seven provinces along the Kampuchean border: Ubon Rachathani, Sisakhet, Surin, Buriram, Prachinburi, Chanthaburi, and Trat provinces, informing them of the facts about the prevention and suppression of malaria in the border region, and saying that when the abilities of the provinces are exhausted and further aid must be requested from the center, to please report right away to the Ministry of Interior for further consideration for aid.

9937

CSO: 5400/4388

BRIEFS

NEW ANTI-MALARIA DRUG--Mahidon University has discovered a new drug which is effective in treating malaria called Methylquinine. It is revealed that Thailand received the most foreign money in Asia for 80 projects to research tropical diseases. The female doctor Ms Tranakchit Harinsut, advisor for the Faculty of Tropical Medicine of Mahidon University, said in an interview that tropical diseases are still serious diseases for Thailand because the country is suitable for the germs and insects to prosper and grow; moreover, because the people in this region are mostly poor, therefore they are always threatened by disease. One tropical disease that is a widespread problem for Thailand is malaria. The Faculty of Medicine has now researched a drug that is highly effective in its treatment. The drug is called Methylquinine. From the positive results in the test phase it is believed that it will be able to be used within the year. In addition, there has been research on problems in the area where malaria is contracted in order to be able to use the drug effectively, and vaccines that can be used will be researched as well. In addition, other tropical diseases are to be researched, such as liver flukes, elephantiasis, and leprosy. It is expected that in the future the lives of people in the tropics will improve. Ms Doctor Tranakchit said that of the projects receiving support from the Special Working Plan on Tropical Diseases, which is a plan of the United Nations, the World Bank, and the World Health Organization, Thailand receives the greatest aid of all the nations in Southeast Asia. A total of 80 research projects are receiving support. These projects concern malaria, elephantiasis, leprosy, and liver flukes. [Text] [Bangkok MATICHON in Thai 25 Jan 84 p 2] 9937

CSO: 5400/4388

NATION FREE OF ANIMAL DISEASE DUE TO MASSIVE VACCINATION

Havana GRANMA in Spanish 13 Mar 84 p 3

[Article by Raisa Pages]

[Text] Although foot-and-mouth disease , African swine fever, fowl pest, and bovin plague are on the increase throughout the world, Cuba remains free of these diseases due to the co-operation of the National Animal Health Center [CENSA]. In 1983 the best overall veterinarian work was done in Santiago de Cuba.

The mission of the Veterinary Medicine Institute [IMV] is to preserve the health of all animals--cattle, hogs, fowl, horses, down to the smallest productive animals, bees--and in 1983, under the sponsorship of the VI Plenary Assembly it reported several achievements.

Seventy-nine percent of the females were free of bovine brucellosis; 88 percent of the herds were free of tuberculosis in 1983 and the goal for 1984 is to free 100 percent of them.

Our country remains untouched by exotic diseases due to the cooperation of CENSA. Cuba can demonstrate to the international institutions that it is a nation free of foot-and-mouth disease, fowl plague, African swine fever and bovine plague although these are on the increase throughout the world.

This was reported during an interview with Dr Ramon Ortiz, national director of IMV. It is a demonstration of the technical strength which our nation has achieved in this field during the last 25 years and shows how the small number of doctors and experts of 1959 have multiplied by the thousands.

Massive Vaccination

Last year, 87 percent of the plan for the prevention of diseases was accomplished --it involves 57 steps, from strict sanitation to the feeding and protection of the herds in every way. The director of IMV said that among the commitments made at the 8th Plenary Assembly is the goal of accomplishing 90 percent or more of the program in 1984.

In 1983 a vaccine against leptospirosis (it attacks livestock and can harm man) was developed. It is being massively used throughout the country. A vaccine against Aujeszky's disease (pseudorabies) was also developed and is being used throughout the nation.

In coordination with CENSA, a vaccine against respiratory diseases which cause pneumonia in cattle and a vaccine against gastrointestinal problems are being produced.

Santiago de Cuba: Veterinarian Vanguard

There was a 4 percent national cattle mortality rate including all categories. In this area, the work at Santiago de Cuba is outstanding, reflecting among other factors good veterinarian work. In this province the rate was 2.4 percent, followed by Las Tunas with 2.6 percent and Cienfuegos with 2.9 percent.

The best overall veterinarian work was done in Santiago. On 10 April Veterinarian's Day will be held there.

Santiago de Cuba achieved the lowest figure in cattle raising history for the death rate of calves with just 3.6 percent.

Concerning the death rate, Dr Ortiz said the main problem is encountered in the yearling category where the figures are 4.7 percent for female yearlings and 5.7 percent for male yearlings.

This generally occurs because, due to bad judgement they are given less food than they need and the veterinary care they receive is still not enough. The highest death rate in this category was on Isla de la Juventud where in 1983 it was 17.2 percent for female yearlings and 7.1 percent for male yearlings.

9204

CSO: 5400/2056

FARMERS WORRIED SWINE DISEASE MAY SOON SPREAD FROM FRG

Copenhagen BERLINGSKE TIDENDE in Danish 14 Apr 84 Sect III p 10

[Article by Brian Johnck Haure: "Swine Disease Threatens Farmers' Existence"]

[Text] New cases of swine disease only 20 km south of the Danish border are now giving farmers cold shivers. If the disease comes to Denmark, it will mean farewell to the business for several thousand pig farmers. Swine disease has caused serious disagreements between the farmers and the authorities; the farmers feel that they are being deceived, and demand more effective measures.

The excavator's hollow engine sound almost drowned out, but only almost, the pigs' cries of terror, while they were forced forward toward the slaughterer's waiting pistol. Almost as on a conveyor belt they were shot, and in a large pile dumped down in the 3-meter-deep mass grave, where the bottom was already covered with still-warm bodies.

The smell of diesel smoke mixed with the animals' last emanations resulted in a nauseous stench, which contributed to making the death scene even more nightmarish. Because it was a nightmare. The farmer's worst imaginable nightmare had become a reality, and he could not bring himself to drag the animals the final distance to the grave.

The scene is the little West German town of Suder Brarup, only 20 km south of the Danish border on 4 April this year, but the nightmare is still fresh in memory from the ravages of the Danish foot-and-mouth disease epidemic on Fyn in 1982, where the animal destruction gradually became so routine that a large herd could be eliminated in a few hours. But a possible wider spread of the disease was prevented by the effectiveness of the destruction.

Then it was the cattle which had to be killed, but the economic consequences were worse for the pig breeders, because Japan and the United States immediately cut off the export of Danish swine products amounting to 2 billion

kroner. With the advance of the swine disease south of the border, the pig breeders fear that they will see the mass slaughtering again.

Economic Catastrophe

But a couple of individual herds destroyed does not cause a great economic disaster. What causes cold chills down the back of every pig breeder is the awareness that this can easily cost his existence. If there is swine disease in Denmark, Japan and the United States will immediately be closed to fresh Danish meat, but it is feared that the United States, which just got rid of swine disease in 1982, will forbid all import of foodstuffs from Denmark. During the foot-and-mouth disease the Danish export of cooked ham was not affected, and it was a good outlet for all EC sales. A number of less important countries will follow an American and Japanese prohibition, including some European countries; for example, England would probably prohibit meat from the areas of Denmark hit by the disease.

That would mean such a powerful load on the swine meat market in all the EC that prices would fall on the order of about 2 kr/kg, and for a large pig breeder with 300 sows and an annual delivery of about 6000 slaughter hogs per year, that means a decline in income of 840,000 kroner per year. Not many would survive such a slap in the face for long, especially not those already having economic difficulties, and there are many who have still not recovered from the price reductions of the foot-and-mouth disease. It was not until the end of 1983 that exports to Japan returned to Normal, and the disease meant economic loss for at least 18 months.

Against that background, the reaction from the National Organization of Danish Pig Breeders has been very aggressive. In 1983, when there was an explosive development of swine disease in West Germany of nearly 100 cases, and Holland and Belgium simultaneously tried in vain to get the disease brought under control, the national association gave the alarm.

Deep Internal Split

When the swine disease, in the beginning of 1984, came closer and closer to the Danish border, and the Danes thought that the German fight against it was too lenient, pig breeders began to demonstrate at the Danish border, demanding that vehicles with animals and feed be stopped, or at least that there be more strict control and disinfection of the vehicles. The Veterinary Directorate had current contact with their German colleagues, but although there is a prohibition against the importation of live pigs into Denmark, and only one or two trucks with Danish porkers went to West Germany, the directorate did not determine that the traffic constituted a risk. Some Sonderjylland farmers bought feed on the other side of the border. This traffic was not believed to constitute a great risk, if they observed the regulations preventing direct contact with Danish animals.

Press Reports

The risk of infection is absolutely the greatest with direct contact between pigs, but merely an individual thoughtless tourist who, despite the prohibition, brings in meat or meat goods to Denmark can unintentionally cause the disease to spread. The chairman of the pig breeders, Jorgen Laursen Vig, is afraid of the great Easter and summer tourist traffic.

"It is of course totally impossible to verify that the prohibition is being observed. We have applied to the Veterinary Directorate and the Ministry of Agriculture about tougher measures, but we are very dissatisfied with the attitude of the authorities. The minister of agriculture has directly declined to talk to us, and information has been withheld about the last outbreak of swine disease only 20 km from the Danish border. We had to learn that from a Danish pig breeder who lives close to the border, over 1 week after Danish authorities knew about it on the afternoon of 4 April. The slaughter houses learned about it from us. We feel that we have been deceived."

There was a press release written in the Veterinary Directorate about the cases in Slesvig. Veterinary Inspector J. M. Westergaard was surprised that the press did not take up the issue.

"Immediately after the press release was written on 5 April, I went to a meeting on the situation in Brussels, where we came down hard on the West Germans, who in our opinion used the wrong strategy. They should have stopped all transport of pigs in and out of the areas affected, as they only vaccinated slaughter hogs. The situation thereby became difficult to control, and the two cases close by the Danish border were due to the purchase of pigs from the hard-hit areas in Niedersachsen. Although nothing appeared in the press, I believe they missed the news value of the item. Later I learned that the press announcement had been stopped."

Westergaard did not want to amplify the reasons why a lid was placed on the information, but referred to the Ministry of Agriculture. During recent days there has been hectic meeting activity between the Veterinary Directorate and the Ministry of Agriculture. Minister of Agriculture Niels Anker Kofoed explained the holding back of the information by saying that he did not want to create panic, because he did not believe it was important that the disease had moved nearer the Danish border, since the disease is not spread by the wind, but only by contact infection.

Catastrophe Exercise

The Veterinary Directorate has now increased its readiness, and in order to be ready for rapid action, there will be an exercise on 3 May including several suspected outbreaks of swine disease in Sonderjylland. But Veterinary Inspector Westergaard believes that the Danish pig breeders will think again before they rush to attack the West German measures against swine disease.

"When we could not sell swine meat during the foot-and-mouth epidemic, the Danish swine meat poured into West Germany despite pressure from the West German farmers to have the border closed. If it had been closed many Danish pig breeders would have been forced to shoot their pigs--they could not have done otherwise. But who thinks of that?"

Worse Than Foot-and-Mouth Disease

The veterinary inspector is far from pleased with the situation, because he believes swine disease can be much more difficult to combat than the feared foot-and-mouth disease.

"In West Germany there have lately been a number of 'insidious' cases, where the typical symptoms have not appeared, and with few deaths in comparison to the normally high death rate of about 80-100 percent. In this way the disease can easily be mistaken for some other, and there is a risk of large spreading before we are aware of what we are confronting.

Both the Danish Farmers Association and the Danish slaughter houses have expressed confidence in the steps being taken by the authorities against swine disease.

"We have just had a fruitful meeting at a high level with West German authorities, and it is our impression that they are very interested in avoiding a spreading to Denmark, because the colossal price decline will go very hard for West German pig breeders," said the president of the Farm Council, H. A. O. Kjeldsen, who is generally satisfied with the West German measures.

51 Years Since the Last

Swine disease has not been confirmed in Denmark since 1933, and then only in one case in Flakkebjerg by Slagelse. Veterinarian F. P. Dalsgaard, now 81 and Denmark's oldest practicing veterinarian, remembers it well.

"Nobody knows for certain if it was really swine disease. At that time we did not have advanced diagnostic methods, but we decided to destroy the entire herd of 200 pigs. I hope I do not have any more experience with that disease."

That wish is shared by all farmers.

9287

CSO: 5400/2523

DENMARK

BRIEFS

NEW LAW ON LIVESTOCK DISEASE--The law about infectious diseases in domestic animals is now changed so that rules can be established about taking samples from livestock for investigation of herpes virus infections as, for example, false rabies in pigs. There is also authority to rule that expenses in connection with the tests will be paid by the animal's owner. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 16 Apr 84 p 9] 9287

CSO: 5400/2523

BRIEFS

ANTHRAX IN MANYARA--OVER 1,000 animals are reported to have died in Lake Manyara National Park in the past ten days following an outbreak of anthrax. Veterinary officials in Arusha have confirmed the reports but could not give an exact figure. They said that the number could be higher. Initial steps to count dead animal and to control the disease have just started. A team of experts left here four days ago for Manyara. Early reports said the deaths might have been caused an anthrax. The reports said the most affected animals were bufallos, antelopes, hippos, elephants, rhinos and other grass eating families. A Tanzanian National Parks Official said yesterday that over 80 people from the park and from Arusha under the supervision of Director of National Parks, Ndugu N. ole-Konchela, has gone to the area to assess the situation. The official said in order to control the disease the carcass would have to be burnt. Rumours had been rife in this town to the effect that the animals had been poisoned by po chers so as to avoid detection by game rangers. Lake Manyara National Park lies 128 kilometres west of Arusha and has an area of 325 square kilometres. The park is famous for its tree climbing lions and flamingos. The last outbreak of anthrax occurred in 1974, but the number of animals killed was not known. [Text] [Dar-es-Salaam DAILY NEWS in English 31 Mar 84 p 3]

ANTHRAX CAMPAIGN STARTS--THE Tanzania National Parks Corporation will today launch a two-week operation in conjunction with the Arusha Veterinary Investigation Centre (VIC) to control anthrax which has killed half the population of impalas in the Lake Manyara National Park, Radio Tanzania Dar es Salaam reported yesterday. The Radio quoted the Director of National Parks, Ndugu N. ole-Konchellah, as saying that the 10m/- campaign would be conducted by three groups comprising national parks and VIC experts. He explained that the operation would involve burning and burying of carcasses of an estimated 500 impalas which had died since the highly contagious disease broke out last December. Vegetation in the areas where the carcasses are found would also be destroyed to wipe out remnants of the disease, he said. The affected area is about half the size of the park. Other reports from Arusha said the disease was spreading to other parts of Manyara and nearby Tarangire National Park and that emergency preventive measures were underway to protect game in the areas. Earlier reports had said the disease also affected hippos, elephants and zebras but the VIC officer incharge, Dr. J. C. Nyange, told the Sunday News at the weekend that deaths of these families were not caused by anthrax. The disease, known to attack cattle, affected wildlife for the first time--22 years ago during which buffaloes were the major victims. [Text] [Dar-es-Salaam DAILY NEWS in English 2 Apr 84 p 1]

ANTHRAX DEATHS--A total of 1,252 wild animals died of anthrax in the Manyara National Park since the outbreak of the disease early last January. The Director of the Tanzania National Parks, Ndugu Tekani Ole Konchellah, said yesterday that efforts to contain the disease in the park were continuing. [Text] [Dar es Salaam DAILY NEWS in English 11 Apr 84 p 3

CSO: 5400/122

UNITED KINGDOM

BRIEFS

FOWL PEST EPIDEMIC--A Shadow Minister in London yesterday demanded an urgent statement about the fowl pest epidemic now sweeping Britain. Ministry of Agriculture experts are investigating 20 suspected outbreaks which have surfaced since the disease was first discovered on a Shrewsbury farm on February 27. Some 500,000 birds have so far died. Dr. Mark Hughes, Opposition Agriculture spokesman said yesterday: "The situation is very dangerous, partly because we do not know the cause and also because the outbreaks are so widely spread throughout the country without any apparent connection." [Text] [Dublin IRISH INDEPENDENT in English 19 Mar 84 p 20]

CSO: 5400/7552

RED LOCUST CONTROL EFFORTS DESCRIBED

Lusaka TIMES OF ZAMBIA in English 10 Apr 84 p 4

[Text]

THE International Red Locust Control Organisation for Central and Southern Africa tries to control locusts which damage crops. The headquarters of the organisation is at Mbala in northern Zambia.

The locust control effort in Southern Africa was set up in 1941 by two entomologists on the pay of the British and Belgian governments. The purpose then was to survey the locust breeding areas of Rukwa in Tanzania and Mweru-wa-Ntipa in Zambia; the latter was confirmed to have given rise to the swarm escapes that initiated the red locust plague of 1930-44.

Because of the infancy of the methods used for survey at the time, very little was achieved. Consequently, in 1949 an international convention was signed establishing the International Red Locust Control Service (IRLCS).

At the time the IRLCS was supported most of the countries in invaded region which included Angola, Burundi, Kenya, Mozambique, South Africa, Swazi-

land, and Uganda, and the then Basutoland, Bechuanaland, Belgian Congo, Northern Rhodesia, Nyasaland, Southern Rhodesia and Tanganyika.

Following the independence of some of these countries in the 1960s the working relationship became strained as the independent countries found it unacceptable to work with South Africa, Southern Rhodesia and Portugal. Consequently in 1970 a meeting was convened in Lusaka where it was resolved to disband the colonial organisation.

Later in the same year, another meeting was held in Kampala during which a new organisation, the International Red Locust Control Organisation for Central and Southern Africa (IRLCO-CSA) was formed.

The member countries to date include Botswana, Kenya, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

The danger to agriculture from the red locust is as real today as it was at the beginning of the last plague in 1930 when most of Africa south of the equator was devastated.

Agricultural production has increased tremendously since the last plague and human population has also increased so that in the event of another plague more damage would be done and more human suffering inflicted.

The IRLCO-CSA is therefore here to prevent another plague. In this task the organisation confines the locust in the breeding areas by destroying their numbers and so preventing them from forming masses or swarms that are capable of emigrating.

Locusts are grasshoppers which are capable of long distance flights when in swarms. Several species of locust occur in Africa. The major ones include the African migratory locust, the brown locust, the desert locust and the red locust.

The commonest species infesting Central and Southern Africa is the deadly red locust.

It has one generation a year. Its mating and egg-laying start with the onset of the rains in November and December. A female lays an average of 100 eggs contained in what are known as egg pods.

Most females lay two to three pods before they die. The eggs hatch in about four weeks, and the young adults emerge in another six to seven weeks.

Locusts feast on most crops but cereals including maize, sorghum, rice, millet, wheat, sugarcane and pasture are most vulnerable.

When in large numbers locusts coalesce into masses and form swarms. A locust swarm may contain up to 40,000 million locusts; each locust weighs an average of two grammes.

Research estimates suggest that a locust eats its own weight of food everyday; thus a swarm of 40,000 million locusts is capable of destroying 80,000 tonnes of food a day.

A plague of red locust cannot occur if no swarms escape from the breeding areas. Hence the main task of IRLCO-CSA is to prevent swarms from escaping from the outbreak areas.

This is done by surveying the areas and killing potential emigrants before they escape. As such the IRLCO-CSA serves as an insurance against locust damage.

There are seven recognised outbreak areas in the region: Malagarasi, Rukwa and Wemhere in Tanzania, Kafue Flats and Mweru-wa-Ngata in Zambia, Lake Chirwa in Malawi and Buzi in Mozambique.

Surveillance is carried out from the air or on the ground. However the terrain of most outbreak areas is such that they are inaccessible for most of the year, largely due to floods during rainy season.

This feature therefore limits the use of ground vehicles to the dry season when the ground becomes passable to Land Rovers. For this reason therefore aerial surveys are the main form of locust detection because the main scouting period for the red locust is during the wet season when the pest is still in the nymphal stage.

The IRLCO-CSA has a fleet of five aircraft including four plains and one helicopter. The helicopter is the

most reliable tool for surveying because it can land almost anywhere, thereby making it possible for on-the-spot assessment of the locust situation.

For adult locust surveying the helicopter has the additional advantage that it can flush the locust out of the grass thereby enabling easy estimation of the locusts present.

Locust control by spraying is carried out against nymphs when they are in groups called bands or against adult locust, preferably in large concentrations.

Chemicals are sprayed onto targets using fixed wing aircraft of which IRLCO-CSA has two Cessna 185 and one Piper Super Cub. Adult spraying is done early in the morning when the locusts are still sluggish, or late in the afternoon as the locusts prepare for night roosting.

The organisation has landing strips in some outbreak areas, including Masenge in Wemhere, Kaliua in Malagarasi and Muze in Rukwa; all in Tanzania.

In other countries the organisation uses established airfields. Apart from field stations, there is also an outstation at Tabora, in Tanzania, where transit supplies for Wemhere and Malagarasi outbreak areas are stocked prior to final delivery to the field.

Another similar set up is scheduled for Harare in Zimbabwe to cater for Southern sub-region.

The biggest problem facing IRLCO-CSA now is

infrastructure, financial and housing for staff.

IRLCO-CSA has no landing rights in Mhala, and for all departures and arrivals IRLCO-CSA aircraft use Kasama airport, 160 km from Mhala.

If the headquarters were moved to Kasama as promised by the host country, some of the problems would have been alleviated. The delay in the host country to complete even the first phase of constructing a hangar and the housing accommodation of the headquarters staff at Kasama has put a severe strain on IRLCO-CSA operational spending.

Aircraft maintenance is another headache for the organisation. A hangar under construction at Kasama cannot be used by IRLCO-CSA because it is not yet completed and has not been handed to the organisation.

Maintenance of aircraft therefore is carried out at Ndola, some two hours flight from Kasama.

The other major problems facing the organisation are the late payment of some major contributors and housing. Because of this, the organisation cannot fulfil all its obligations in time.

The housing situation at Mhala headquarters is unsatisfactory. Houses have been partitioned to accommodate several officers. With the expansion of IRLCO-CSA to other pests, the situation will become critical when new staff are engaged.

DENMARK

BRIEFS

TOUGHER PLANT DISEASE LEGISLATION--The old 1957 law for combatting dangerous plant diseases and insects is not up-to-date, according to a large majority in the Folketing, and the Folketing has now approved the minister of agriculture's bill about plant damagers. The National Plant Supervision now has come clearly defined control authority on behalf of the minister. Henceforth the state's liability to pay damages is limited in cases in which the destruction of plants or other things is not confirmed as having been attacked. The law goes into force 1 July. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 16 Apr 84 p 9] 9287

CSO: 5400/2523

VIRAL DISEASE THREATENS RICE

Kuala Lumpur BUSINESS TIMES in English 9 Mar 84 p 21

[Article by A. Indrani]

[Text] Malaysia is waging an uphill battle against a viral disease ravaging thousands of hectares of riceland every year.

If left unchecked, the panyakit merah viral (PMV) disease will deal a fatal blow to Malaysia's efforts to become self-sufficient in rice.

Transmitted by the green leafhopper, the disease occurred only in five-year cycles when it was first detected in Malaysia in 1933. Now, the disease has entrenched itself in the country's rice bowl where farmers lose about US\$30 million every season.

The disease is similar to the tungro in the Philippines, "yellow orange leaf" disease in Thailand, mentek disease in Indonesia and "yellowing" disease in India.

These rice-producing countries have also lost substantial rice crops to the diseases which showed symptoms similar to the PMV disease.

The disease stunts the growth of the plants, besides turning them yellowish and later rusty red. The rice husks are empty and blackish.

The younger the rice plants, the more susceptible they are to the disease. Loss is usually 100 percent once the hoppers prey on the seedlings at the nursery stage. Up to 60 days after transplanting, however, loss is cut down to 10 percent.

The source of the virus is now known. Unlike bacteria and fungus, virus cannot be controlled with chemicals, Malaysian pathologists point out.

And the hoppers are around the whole year through as long as there is food available. The disease was first detected in the central state of Perak in 1933. In the late '70s the disease afflicted Malaysia's rice bowl in the northwest state of Kedah.

What worries the government most is that the disease is on the upsurge in the 90,000-hectare green-belt area of the Muda Agricultural Development Authority (Mada) covering Kedah and neighbouring state of Perlis.

Damage caused by the disease will greatly affect the farmers' livelihood. About 70 percent of the 63,000 farmers in the Mada area are poor. They work an average 1.7-hectare plot which is considered uneconomical.

Rice farmers lost more than US\$20 million when the PMV epidemic hit the Mada area in 1982 and wiped out 17,000 hectares.

The government decided that one of the most effective ways of checking its spread was to suspend rice cultivation in the Mada area from October last year for one season. Irrigation water from the huge Pedu Dam was also cut off since Jan 15 this year.

The move was aimed to dry up the rice fields and eventually starve the hoppers.

But about 4,000 farmers ignored the government's advice and went on to plant on 17,700 hectares after the October deadline.

Malik Mujid, crop protection director in the Agriculture Department, says many farmers still don't understand the factors leading to the spread of the disease.

"Many do not realise the danger posed by the PMV disease to other rice producing areas and the effects it will have on the national economy," Enock Talip laments.

And for a reason, Malaysia will have to import more rice this year due to the dreaded disease which affected crops in the states of Perak, Penang, Kedah, Perlis and Kelantan the last season.

Estimates are that Malaysia would have to import between 400,000 and 500,000 tons of rice this year. In 1983, the country's rice import totalled 384,000 tons worth US\$120 million; in 1982, import reached 391,088 tons.

Malaysia's rice production of about 1.3 million tons annually is enough just to meet only 77 percent of domestic requirements.

Government officials predicted that Malaysia stands to lose 460,000 tons of rice per season if the PMV disease remains unchecked.

To contain the threat, the Malaysian Agricultural Research and Development Institute (Mardi), the Agriculture Department and other government agencies have designed an integrated pest management strategy.

Designed for three years, the strategy includes: training of extension staff and farmers, a surveillance system to monitor both disease occurrence and the presence of green hoppers and the use of PMV-resistant varieties.

About 50 years have passed since the disease first blighted the nation's rice crop. Today, it remains a major threat to Malaysia's dream of self-sufficiency in rice.--Depthnews Science

CSO: 5400/4409

HOPPERS INVADE PADDY FIELDS

Kuala Lumpur NEW STRAITS TIMES in English 1 Mar 84 p 6

{Text}

ALOR STAR, Wed. — More than 1,000 farmers in Sanglang, about 22km from here, have been suffering sleepless nights ever since their padi fields were invaded by hoppers 10 days ago.

The grey and black pests with dark spots on their wings have so far destroyed about 4,000 relungs of padi.

The secretary of the village development and security committee, En-cik Wahab Abdul Rahman, said the hoppers destroyed padi in about 1,500 relungs in the first few days.

"This is the first time local farmers are facing this kind of threat."

Last season the area was affected by the padi murreh virus (PMV) but the situation then was not as alarming as the damage currently caused by the hoppers.

The farmers said that they had run out of ideas on how they could control the threat effectively as the hoppers have been multiplying despite the use of insecticide.

"Many of the farmers are on the verge of giving up as whatever preventive action they have taken have proved fruitless."

Those who still harbour some hope have bought insecticide and paid workers to spray their fields.

The farmers are also worried that they might not be able to repay the loans which they had taken from the Agriculture Bank to cultivate their land.

"We hope the bank will understand our problem and be flexible with us this time by allowing us some time to settle our payments," said the farmers.

They are also worried about the side-effects of the insecticide they are using.

Some of them have already been forced to seek medical treatment from hospitals and private clinics in Kangar and here.

Some have complained of breathing problems after having inhaled insecticide.

At least two farmers were reportedly warded in Kangar and here.

The farmers said most of them were either ignorant or indifferent to the health hazard and the measures to prevent being affected by the insecticide.

They appealed to the Muda Agricultural Development Authority (Mada) for help.

"We are afraid more of us will face similar health problems if we are to do the spraying ourselves."

SUGAR INDUSTRY THREATENED BY ELDANA BORER

Kuala Lumpur BUSINESS TIMES in English 20 Mar 84 p 5

[Text] Mount Edgecombe, South Africa, Mar 19--A tiny worm no bigger than a child's thumb is bugging South Africa's sugar growers.

The innocent-looking eldana borer, an occasional visitor in the past to the country's cane fields, has returned in recent years and looks as if it is here to stay.

Industry experts reckon the eldana now chews up about one percent of the annual crop--not a huge amount, but an extra blow to an industry reeling from the effects of a crippling drought and low world prices.

The drought, which cut the latest crop by about one third of its potential to about 1.4 million tonnes, and a glut in sugar on the world markets helped the industry lose nearly US\$200 million in the latest season.

Though traditionally one of the world's major exporters, sending up to one million tonnes abroad every year, South Africa was forced to buy unrefined sugar from Asia, the Caribbean and the rest of Africa to substitute for the drought-hit crop.

The cost was enormous. Export earnings fell to US\$50 million from almost US\$250 million two years ago and the industry's near-empty coffers were completely drained.

Sugar Association general manager Peter Sale said the industry would need to borrow another US\$110 million this year. It has already taken out US\$150 million in bank loans while the association's "rainy day" fund is in deficit to the tune of another US\$150 million.

Sugar growers, widely seen as prosperous gentlemen-farmers, received no return on their investments this year.

During a recent trip by reporters to the sugar-growing Eastern Natal province, they stressed repeatedly that stories of them playing polo and drinking sundowners while their black labourers toiled in the humid climate were no longer valid.

"I've bought virtually no equipment for five years," complained Basil Hagemann, a fourth-generation farmer who said he lost about US\$120,000 in the latest season.

Next year's crop looks as if it will be much better, thanks to seasonal rains which returned to Natal with a vengeance this year, flooding much of the northern growing area.

Driving through the coastal belt which borders the Indian Ocean, the head-high cane has a bright green lustre as it stretches to the horizon on both sides of the road.

But the industry remains pessimistic. Sugar Association export manager David Hardy says the international market is in chaos because of huge subsidies paid to European Community farmers and special agreements which give preference to underdeveloped exporting countries.

The world's top sugar nations have been battling to thrash out a new pact to balance the interests of consumers and growers, but Mr Hardy says he sees little chance of an effective agreement replacing the one which expires this year.

And there remains the eldana borer.

"We're quite convinced that we're stuck with eldana forever. We're now trying to keep it at levels that are economically acceptable," said Gerald Thompson, director of the industry's experimental station here.

The station hopes the eggs of three kinds of wasp and a fly from West Africa, where the worm was first found a century ago, will deal with the problem. But success as yet has been limited.

"The wasps work in the station but not so well in the fields," Mr Thompson said. "If we could get the eldana to come to the laboratories everything would be fine.

CSO: 5400/122

PESTS THREATEN MUMBWA MAIZE, COTTON HARVESTS

Lusaka TIMES OF ZAMBIA in English 16 Apr 84 p 5

[Text]

MAIZE and cotton harvests in Mumbwa district may be seriously affected this year unless measures are taken by the Ministry of Agricultural and Water Development to provide pesticides in the area.

This was one of the problems farmers in the district brought to the attention of a three-man agricultural research team from the University of Zambia which is currently touring the district under the sponsorship of Swedish International Development Agency (SIDA).

A spokesman for the team said in a telephone interview from Mumbwa yesterday that the two-week programme had already taken them to eight villages in the district and only two were yet to be covered.

Among the complaints they had got from the farmers was pests destroying their crops.

The problem was serious and needed urgent attention if their cotton harvests were to be saved.

"The crops are encouraging and could turn out a good harvest if the present shortage of pesticides is quickly alleviated," said the spokesman.

Other complaints put forward were shortage of farming implements and fertiliser for farmers who lived in villages which were far from the boma.

And in Lukulu, Appointments and Disciplinary Subcommittee Chairman of the Central Committee Mr Elijah Mudenda said Western Province could become a foreign exchange earner if it produced more cashew nuts for export, reports Zana.

He noted that cashew nut trees grew well all over the sand plains in the province without the application of fertiliser.

Mr Mudenda was speaking at Namayula Primary School after inspecting the schools' production unit where cashew nuts are grown.

At Lukulu Mission Hospital Mr Mudenda commended hospital authorities for the expansion programme they had embarked on.

Mr Mudenda said this after hospital matron Sister Bonaventure informed him that already two wings of tuberculosis and antenatal wards had just been completed and were operational. She added that the expansion programme would continue whenever funds became available.

Earlier, Mr Mudenda who was accompanied by Information and Broadcasting Minister Mr Cosmas Chibanda was taken on a conducted tour of the hospital by the matron. — Zana/ZIS.

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